

# MANUFACTURERS' RECORD

A WEEKLY REVIEW OF THE IRON, STEEL, METAL & HARDWARE TRADES.

AND A MANUFACTURING AND TEXTILE PAPER, DEVOTED TO THE UPBUILDING OF SOUTHERN MANUFACTURES AND THE DEVELOPMENT OF THE MATERIAL RESOURCES OF THE SOUTH.

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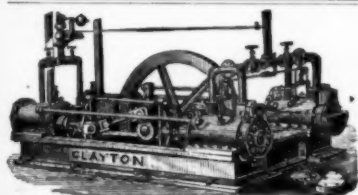
BALTIMORE, MAY 17, 1884.

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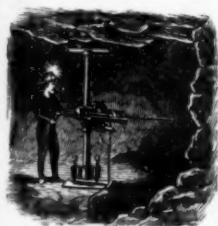
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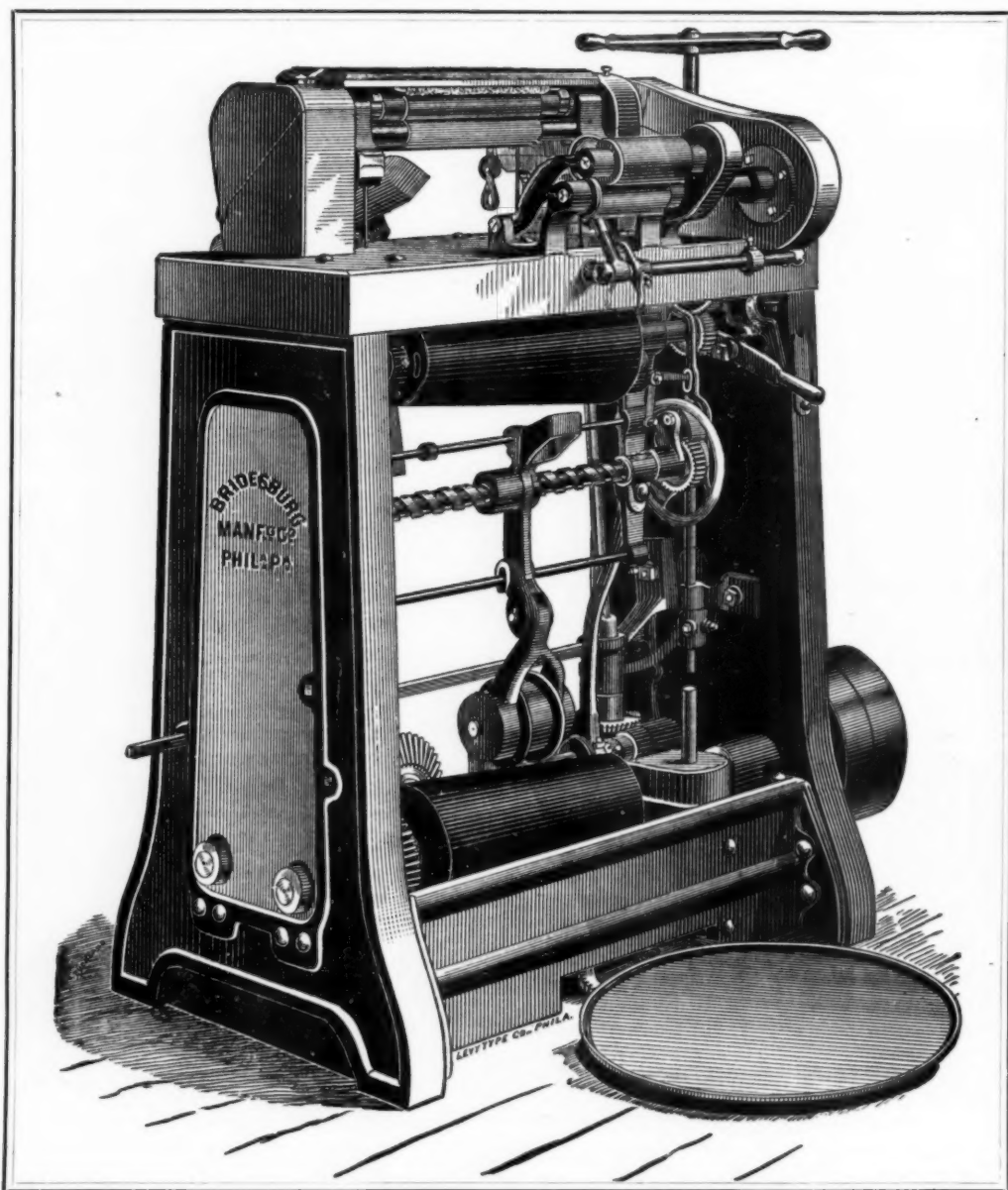
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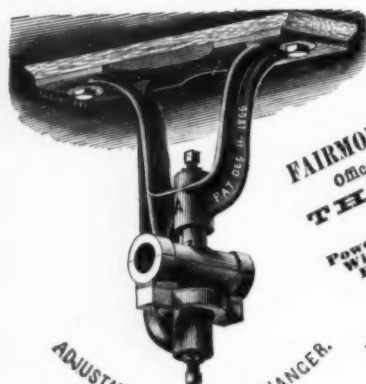
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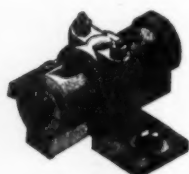
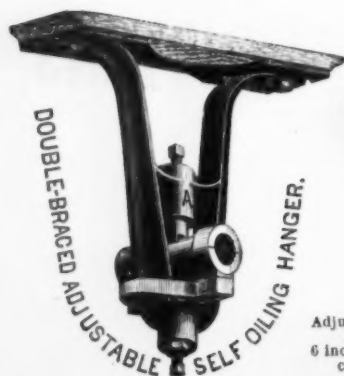
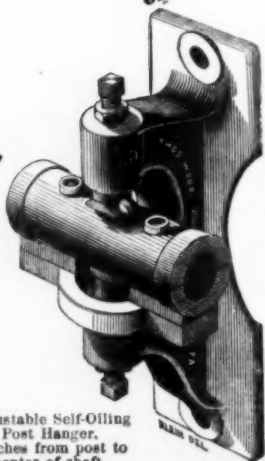
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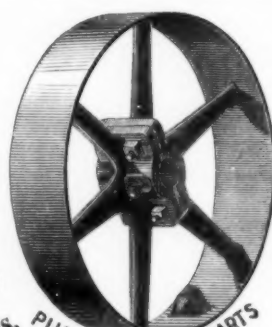
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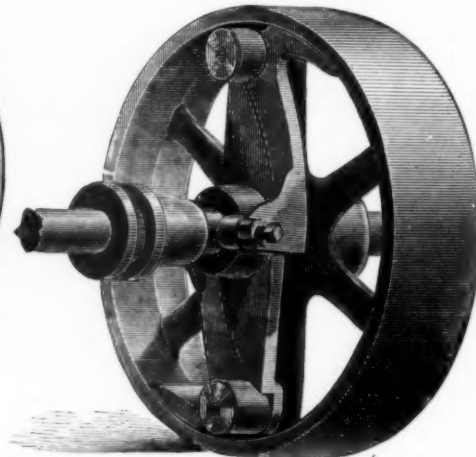
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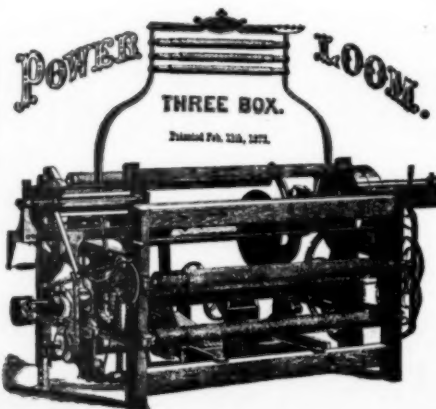
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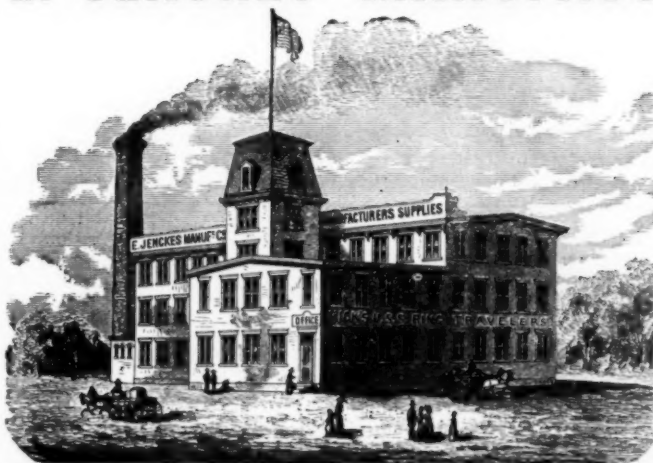
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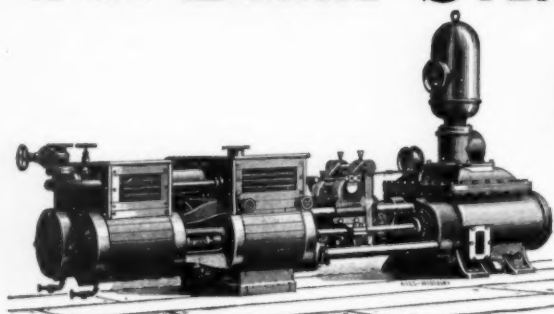
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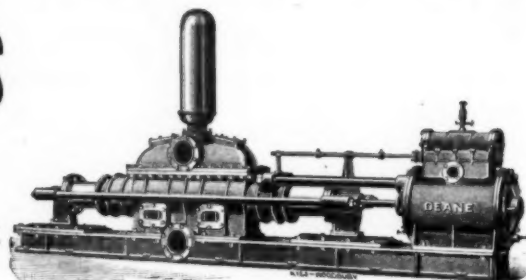
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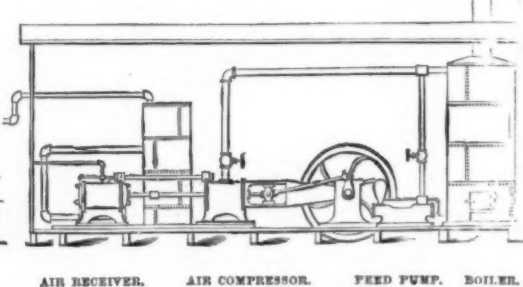
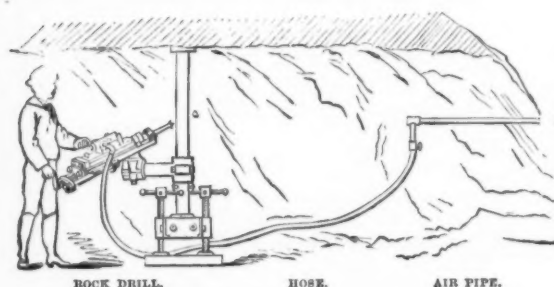
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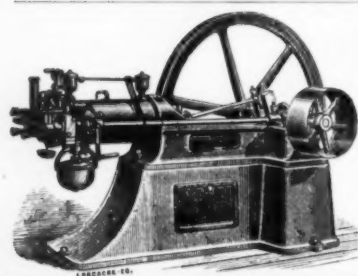
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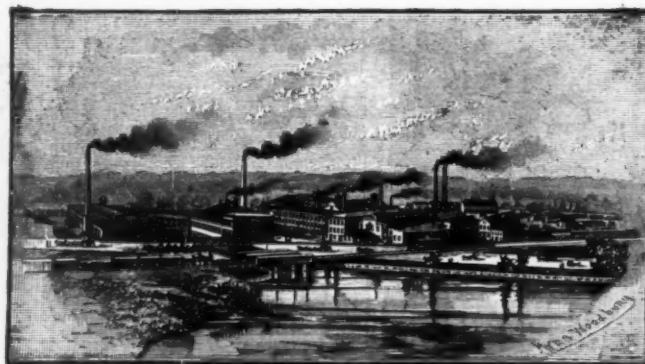
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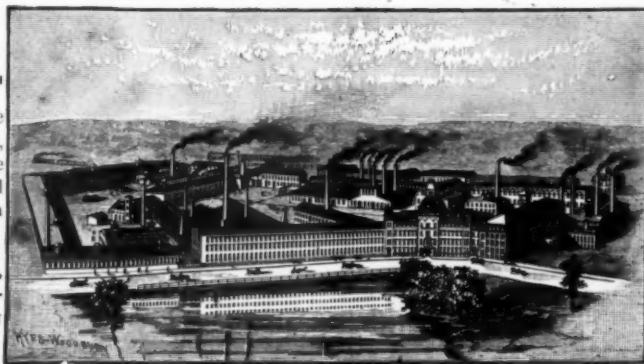
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BALTIMORE, MAY 17, 1884.

Our readers will confer a favor upon our advertisers and upon us, as well as benefit themselves, if, whenever they write to anyone advertising in this paper, if it is only for a catalogue, they mention that "your advertisement was seen in the BALTIMORE MANUFACTURERS' RECORD." A careful compliance with this request will be much appreciated.

CORRESPONDENCE relating to the manufacturing, mining, lumbering and all other material interests of the Southern States is solicited. We invite those interested in the development of the South to make free use of our columns. Reaching so many capitalists in all parts of the United States seeking profitable investment in the South, the MANUFACTURERS' RECORD offers an excellent chance for the people in that section to place the advantages of each locality before those likely to be interested. We will take great pleasure at all times in telling what has already been accomplished in the South, and showing up the opportunities of doing still more,—so if you desire to attract immigration or capital, or if you know of an opening for profitable investment in manufacturing, mining or kindred pursuits, write us an account of it. It will be published free of cost.

WHAT uses will you find for all the iron that is made after all the railroads in the country have been laid with long-lasting steel rails? asked a gentleman the other day who is interested in Southern iron affairs.

THE *Atlanta Constitution*, and some other Southern papers, appropriate our statistics as to the progress of Southern cotton manufacturing, but use them as their own editorial work, without a word of credit,—a kind of journalism that is not usually esteemed very highly.

OUR very excellent contemporary, the *Industrial World*, of Chicago, appears with a new heading of unusual excellence of design.

## A Danger to be Avoided.

"You were right and should repeat it at least once a month," said a prominent Southern coal operator a few days ago in discussing the editorial in a late issue, in which we urged upon Southern people the importance of not rushing into new manufacturing or mining enterprises unless these enterprises were to have the benefit of experienced management. Although the *Atlanta Constitution* thought our advice was not needed, we feel sure that it is; and the newspaper that does not try to keep its readers from making mistakes that will entail great loss, fails to do its duty. We know that the enthusiasm of the Southern people in regard to the material development of their marvellous resources is so great that they are readily disposed to invest in any new enterprise that looks promising. This spirit is heartily to be commended. It is the spirit that will do vast good for the South, but in such matters prudence and care are essential. It is useless to expect the Southern people, who, until lately, have done comparatively little manufacturing, to be as thoroughly posted in regard to the management of such enterprises as the people of the North, who are brought up with factories all around them, and whose practical education has been gotten in the workshop. That the advantages for many kinds of manufactures are greater at the South than in any other section admits of no question; but notwithstanding all this, success is very uncertain unless there is the best management.

The gentleman whose remark begins this article has seen the force of what we have stated. Some years ago coal mining became the rage in his town, and many companies were organized to work most excellent coal properties. The citizens of that town, though they had grown rich at other things, and though their business capacity was of a high order, knew nothing of coal mining. Unfortunately, however, they thought they did; but the fact that their coal mining operations were abandoned in a few years with an aggregate loss for the various companies of about \$800,000, all of it home money, demonstrated that they did not understand the business. Their mines were well located, their coal was of excellent quality, and yet they only piled up debts. Under judicious management these mines would have been very profitable, as subsequent events have proven; but as the gentleman who told us, and who, by the way, saved the mine of which he was president from as serious disasters as befell others, said: "We lacked experience."

With an earnest and abiding faith in the glorious future of the South we are unceasingly working for the welfare of a section in which we are from every motive so deeply interested; and we must raise a voice of

warning not against putting money in new enterprises, but of rushing into enterprises that are not to have the benefit of the most thorough practical management. Some weeks ago a Southern paper, in trying to work up a boom for a cotton mill in its town, claimed the most marvellous profits for Southern cotton mills—ranging from 30 to 50 per cent. Such statements do harm. Southern cotton mills are undoubtedly most excellent things, and we only wish we owned a few; and the South is, without a doubt, to be the cotton-manufacturing centre of the country. But if these mills are regularly paying from 30 to 50 per cent. dividends we have failed to hear it. We are anxious to see the Southern people turn their attention to the inauguration of new enterprises and to the building up of their own sunny land, that they may at the same time rebuild their fortunes, and not leave all the profits of such industries to be reaped by Northern and Western men, and it is for this very reason that we urge the importance of investing their money only in such enterprises as are to have the benefit of thorough practical business management.

## The Founding of a Town.

Some months ago we told of how two Georgians,—the Gordon Brothers—had laid the foundation for a new city. Doubtless many of our readers thought little of what that meant. So let us take another look and see what has been done.

Near Tusculumbia, Alabama, bordering on the Tennessee River, there is a magnificent location for a great manufacturing city. The Gordons saw this and purchased a large tract of land. Then they organized a company, with half a million capital, to build a town,—a business, which, by the way, is becoming very popular at the South. The stock was quickly taken; but before the company was fully organized, a New York Southern railroad syndicate concluded that they would like to take a hand in the building of this town, and so they were allowed to purchase an interest in the company. Then the organization and construction of railroads to connect this new place—a place without even a frame house—with the outside world was commenced and pushed with an energy and enterprise that were really wonderful.

Sheffield is the name selected for the town to be. The capitalists interested in Sheffield aroused an enthusiasm in regard to its future, greater probably than was ever before felt about any city ere the foundation for its first house had been laid. Having awakened such general interest throughout this country as well as in England, and all done in about six months, they determined to hold a great public auction of lots, and on the 8th of May the sale commenced. It is estimated that there were from

five to ten thousand people present. The first lot offered brought \$1,000. The bidding on others was rapid and even excited, and at the end of the first day it was found that the sales aggregated over \$100,000. By the following day the demand was so great that 50 per cent. advance was in some cases offered and refused for lots purchased the day before. On the second day \$8,900 was paid for one lot 150 feet square, on which to build an opera house.

Judging only by these figures one might think Sheffield was a thriving town with rapidly increasing industries, but Sheffield as yet is only an open field. It was to its future that men were looking. The advantages of its location are so great that, if once established, manufactures are almost sure to prosper; and even before the sale was made, many companies had been organized to build iron works, factories, &c. It has been determined to proceed at once with the building of gas and water works. A large hotel has been contracted for; two or more extensive iron furnaces will soon be under way and probably a large grain elevator. A \$50,000 bank will be established, the money being all ready, and the president and cashier having been elected. Two saw mills, a planing mill and a sash and door factory will soon be furnishing material for the many houses that will be building in a few weeks, while a \$60,000 brick yard is hard at work making bricks, and at least one more will be doing the same in a few days. Other enterprises of various kinds have been determined upon, and the rush of work at Sheffield within a few weeks will tell of how rapidly the South is pushing forward. No longer content to lag behind, she can now well afford to challenge the world for a race in material progress.

That Southern men have planned this new town, and that Southern men have been the heaviest investors in it, while it is Southern money that is to build most of these many manufacturing establishments, is sufficient proof that the people of the South are awake, and that the development of the South is not, as some seem to think, due entirely to outside men and money.

## Pleasant Words.

The Norfolk Virginian, after republishing our statistics about the progress of the South, says:

"This is a remarkable exhibit and must have a powerful effect in attracting attention to the growth and prosperity of the South and the field it presents for the investment of capital. THE MANUFACTURERS' RECORD is doing a grand work in its efforts to show what is being done in the South."

It is with great pleasure that we acknowledge the many kind words of praise so constantly received from the press and people of all parts of the South. THE MANUFACTURERS' RECORD is devoted to the one great work of helping on the development of the Southern States, and we rejoice to know that our efforts are so well appreciated.

## North Carolina Rocks.

[For the Baltimore Manufacturers' Record.]

Your invitation for correspondence on industries or industrial opportunities in the South tempts me to say something in the interest of the mineral deposits of North Carolina. A bare recital of material and extent of deposit is all that I shall attempt in this paper. The resources of the State are so extensive and varied as to make a comprehensive review of them impossible in a short sketch.

I will only mention in brief a few of the leading mineral deposits, beginning with

## GOLD ORES.

The first gold ever discovered in America was found in this State, and long before the wild days of '49, when men braved the perils of crossing the great plains of the West in search of the gold fields of the Pacific slope, North Carolina had produced its 28-pound nugget, and Gold Hill and other mines were at work. Since this time the work of discovery and development has progressed slowly but surely until now the area of gold-producing localities covers some 29 counties. The most important deposits, and those which have been most thoroughly examined, are situated on a granitic axis running in a North-easterly direction across the State, mentioned by Emmons as the Greensboro and Salisbury granite belt. (There are two other granite belts, mentioned also by the same geologist—Emmons—one East and the other West of this central one, which is the most prominent of the three, and which yields magnificent building stones—grey granite and a beautiful syenite of a deep flesh color.) The most prominent gold-producing counties are Rowan, Cabarrus, Mecklenburg, Montgomery, Stanly, Davidson, Randolph, Union, Catawba, Caldwell, Burke and Gaston.

The ores embrace all the varieties or combinations of auriferous pyrites, galenite and chalcopryite, besides the free gold in the brown or decomposed ores, and in milky quartz, found both in place and "floating" on the surface, and in placer or grit deposits.

In Montgomery, Stanly, Cabarrus and Burke counties a large amount of free gold in "dust" and nuggets has been taken from these deposits, but mostly by native petty miners, with hand rockers. But few hydraulic mines have been worked, and they have not been pushed with any remarkable energy. The Sam Christian in Montgomery and the Shuford in Catawba have yielded more than any of the other placer mines, and both are said to have paid. The former is idle, while the latter is still running. It is claimed that in Montgomery county when the grain crops are short the gold crop is sure to be good. This is really true to a large extent, and may be explained in this way: The grain crops never fail in that section except from continued dry weather, and when one of these dry seasons comes on the branches and even the larger creeks go dry. Then it is that the golden harvest is gathered very carefully from the accumulation of sand and grit to be found in the beds of these various streams. This material is usually washed in ordinary hand rockers, though a few of the more prosperous gold hunters have Chili mill, or an arrastra, to help them to clean more thoroughly this auriferous grit. The average wages for a hand rocker is from one to three dollars per diem, while the Chilian mill will turn out from four to twenty dollars per day, according to the richness of the material.

The estimated product of North Carolina mines is about \$30,000,000, but this estimate is only based on what statistics could be obtained from several sources, while this county of Montgomery and other counties away from railroads have been

adding annually large amounts of gold of which no record has been kept.

The little word "if" plays havoc with many rich deposits here. "If" the sulphide ores could be made to yield say seventy-five per centum of their richness, or "if" any process could be found to work satisfactorily these various sulphides with that necessary desideratum, cheapness, then the yield must be immense.

The inability to work this class of ore is a great hindrance to mining in this section, and at once opens a place for inventive genius. Another sadly depressing cause to be contended with is mismanagement. This last trouble has caused many failures, and is to-day a great demoralizing influence, crippling our more rapid development. When smelting furnaces are introduced, and are conducted legitimately and on business principles, as in the West, practical results may be confidently expected from this now non-producing material.

## COPPER ORES

are as abundant, and probably more widely spread than the gold ores, but are not found everywhere in paying quantities. Chalcopryite, carb. of copper, malachite and vitreous ores are the ordinary forms in which this material is found, though red oxide, grey copper, azurite and copper glance are frequently met with.

The Messrs. Clayton, of your city, are the most successful and prominent copper miners in North Carolina. They are now working a large force at the Conrad Hill mines, in Davidson county, and are turning out thousands of pounds of copper in ingots, while the gold which is associated with their ore—prill, or peacock ore—more than pays the expense of working.

It is a fact sometimes overlooked, or unknown, that most of the North Carolina ores are auriferous, and may be worked with profit for gold.

## GALLENITE

occurs in the State, and is generally very complex, most all of it carrying gold, silver, copper, lead, zinc and sulphur. The Old King or Silver Hill Mine, in Davidson Co., is the oldest and deepest yielding this material in the State. It has been worked to a depth of nearly 800 feet. The ores—argentiferous galena and zinc blend—were put to a practical use during the war.

The Confederate government had not an overplus or surplus of any kind, and they found it necessary to utilize this ore to make bullets. They had no time to extract the silver. Rather extravagant bullets they.

## IRON ORES

exist in about 30 counties of the State in workable quantities. From Chatham county west to the Tennessee line, iron is found; the finest ores are in the extreme western part of the State. Immense beds or deposits of strongly magnetic iron is there found, which is free from phosphorus and sulphur. In the Piedmont iron beds the presence of titanite sometimes prevented extensive development in antebellum days. No experiments have since been made; though it is now understood that ores of this kind may be successfully treated.

The magnetic iron of Mitchell county is now being successfully worked. They are just finishing a blast furnace capable of turning out twenty tons of pig iron per day, at the famous Cranberry Iron Mines. They have built railway connections with Johnson's City, Tenn., and everything around the mine looks as if the Cranberry Company had settled down for a lifetime business. The ore is a highly crystallized magnetite, and is remarkable for its toughness and tensile strength. It may be of interest to give four analyses by Dr. Genth and one by Prof. Chandler, of New York, taken from the geological report of the State. They are as follows:

	I.	II.	III.	IV.	V.
Magnetic ox. of iron	94.37	91.45	85.59	80.77	91.89
Oxide of manganese	0.26	0.06	0.24	1.42	0.32
Alumina	0.42	0.77	0.11	0.52	0.13
Lime	0.43	1.01	0.77	....	0.06
Magnesia	0.36	0.53	0.33	....	0.23
Water	0.44	1.53	8.21	1.15	....
Silica, Pyroxene, etc.	4.16	5.74	11.48	9.08	4.02
Sulphur	....	....	....	....	0.25
Phosphoric acid	....	....	....	....	trace.
Total	100.00	100.00	100.00	100.00	99.95
Metallic iron	68.34	66.22	61.98	58.49	66.63

## OTHER MINERALS

of economic value to be obtained in merchantable quantities are corundum, mica, garnet, albite, barite, agalmatolite, asbestos, kaolin, pyrophyllite, and others, including zirconous (ore of zirconium) and albite. I might continue the list with rare minerals in the West, and then take the reader East through the marl and phosphate beds, and back again West through the forests, showing all their wealth of timber; but this paper is already long, so I will close by inviting those of your readers who may care to verify these statements to visit Raleigh this fall and attend the North Carolina State Exposition, which opens Oct. 1st and closes Oct. 28th. This exposition will probably do much to influence skilled labor and capital to seek here profitable fields for investment. It will be comprehensive and instructive, and no better opportunity will ever be given for seeing North Carolina.

T. K. BRUNER.

Salisbury, N. C., May 10, 1884.

## Consumption of Cotton Goods in the South.

What a Correspondent Says of the Future.

NEW ORLEANS, LA., May 9, 1884.

Editor Baltimore Manufacturers' Record:

SIR:—It has never been my pleasure to see your journal until the copy you were so kind as to forward me, although I see frequent extracts from it in the Southern newspapers.

I rejoice at the excellent work you are at, the very liberal spirit characterizing it, and I especially congratulate you on your happy conception in enumerating the progress of Southern development—a conception as novel as beneficent, and it is almost a new discovery in journalism, a distinct epoch in enterprise in that line.

It is needless to say how I sympathize with the increased impetus you are giving to Southern progress. For nearly eleven years I have been fairly making the Northern journals groan under the weight of the numerous articles from my pen, predicting much that has come to pass, and far more yet in store for us in the constant harvests the South is reaping from the bounteous fields of her progress in the exhaustless future of her development. One could write a large book on entirely novel aspects.

But a little while ago the thought was suggested to me of the far greater consumption of cotton goods South in proportion to her population than at the North. I wish I had space for a long article on it. I need not assume (although it will be true) that the South will become the centre of the woolen, cotton and iron industries of the United States and of the cotton manufacturing of the world. But the ratio of cotton goods consumers will be greater for the whole country at the South than at the West. How? For many reasons; in the first place, a large immigration from the West to the South has set in and will be constantly increasing. Had these people stayed West, they and their increase would have used more woolen goods per capita than they will South. The climate not only admits of this, but compels it. How long can the Western and Northern people use cotton goods and fabrics into which it largely enters there as compared with a residence South? they with their short summers, we with our long ones and mild winters.

Again, immigration is not going West as it was. Much of it will come South. Indian wheat has sounded the knell of Western wheat. England (nearly ruined by wheat-raising) is going to give it up, is going to look to India for wheat, will look to dairying more, and hit the United States another lick by dispensing with much of the cheese and butter of the latter. If the immigrants and their increase had gone West who will come South they would have needed and used woolen goods and few cottons. South it will be just the reverse.

But again, more cotton goods, proportionately to population, will be used than ever, because they will be cheaper. When the South gets to making cotton goods at the same compensation New England enjoys, (or suffers,) then the cotton goods will be very cheap. Then New England must shut up shop. Does any one doubt that the cheaper a needed article, (other things being equal,) the larger its consumption!

Again, the negro race increases far more rapidly, in proportion to population, than an equal number of Western folk. They have the fecundity of rattlesnakes, as strongly Tory Sam Johnson said sneeringly of us Americans during the Revolutionary War. Look what a rumpus, what a howl of dismay, the last census caused in the Republican party! Now the negro is one of the great consumers of cotton goods.

Again, there will be a vast army of workers in the future South,—operatives from England, from the East, New England,—in the future cotton factories here. This will greatly disturb the proportion of wool consumers. Had all these New England operatives stayed there, woolen goods would have been their principal clothing. South it will be cotton. Had these English artisans stayed in England, they would not have contributed such a large ratio to an increased population and an increased consumption of cotton goods.

How will this tell on the Western farmer?

Well, a large proportion of non-consumers, who ate Western wheat, pork, beef, etc., will be out of his reach, and will eat these Southern-raised breadstuffs. They will not need his wool to go into goods to protect him from the rigors of their former climate.

Again, the New England farmers who used to make butter, cheese, raise vegetables, beef, mutton, etc., for these New England operatives, will raise corn and wheat, and increase and cheapen it in competition with the Western farmer.

Again, these factories South will stimulate sheep-raising here, and our wool will furnish a cheaper and better article for the factory than theirs. (I haven't time to prove this here.) Indeed they will have to buy our woolen goods and pay for the distance from us.

I might say far more. In these thoughts you will find, I think, the germs of great future events.

M. B. HILLIARD.

## Important Road Southward.

Editor Baltimore Manufacturers' Record:

Our State, North Carolina, having granted a charter for a railroad from the South Carolina line, in Cleveland county, N. C., via Statesville, to the Virginia line in Surry county, N. C., called the "Statesville Air Line," and the company having organized, agreeable to provisions of charter, is now ready and anxious to co-operate with a reliable company to build the road. Extended, as designed, to Spartanburg, S. C.; and Salem or Roanoke City, Va., it would make most important connections between the principal Southwestern and Northeastern cities, making an "inside track" and a great "thoroughfare," and developing a fine section of North Carolina for agriculture, water-power, minerals, timbers, &c.

Correspondence is invited. Letters to be sent to C. A. Carlton, Statesville, N. C., or "Director," Elkin, N. C.

May 8th, 1884.



## New Log Saw Mill.

The accompanying engraving on this page is a faithful representation of the new band log saw mill, designed by the Egan Co., of Cincinnati, Ohio, successors to Cordesman & Egan Co., who have had long experience in the manufacture of band resaws, and have embodied in this machine all the points which they have found to be of advantage to saws of this class. The frame is of the straight column pattern, which is the strongest and best for this purpose. The wheels are of glued-up wood; the spokes being wrought iron and the rims are covered with leather or rubber, according to kind of work it is called on to perform. The adjustments are all made from the working side of the machine, so that the operator does not

produced is much smoother and brings a higher price in the market. For further particulars we quote the following from the company's catalogue:

"Band saw mills are of immense advantage and economy in cutting large logs and good lumber, such as wide poplar, walnut, ash, oak, cedar, pine, etc., and for cutting thin lumber for special purposes, such as  $\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{3}{4}$ " and 1" it will excel all other machines.

The blade used is about 18 or 19 gauge, so that the kerf taken out is about a scant 1.16"—every four or five cuts made will save about an inch board over the ordinary mills with the top saw, and the lumber produced is much smoother and can be dressed by a much lighter cut, and will consequently bring a better price. We have made band saws and band resaws for

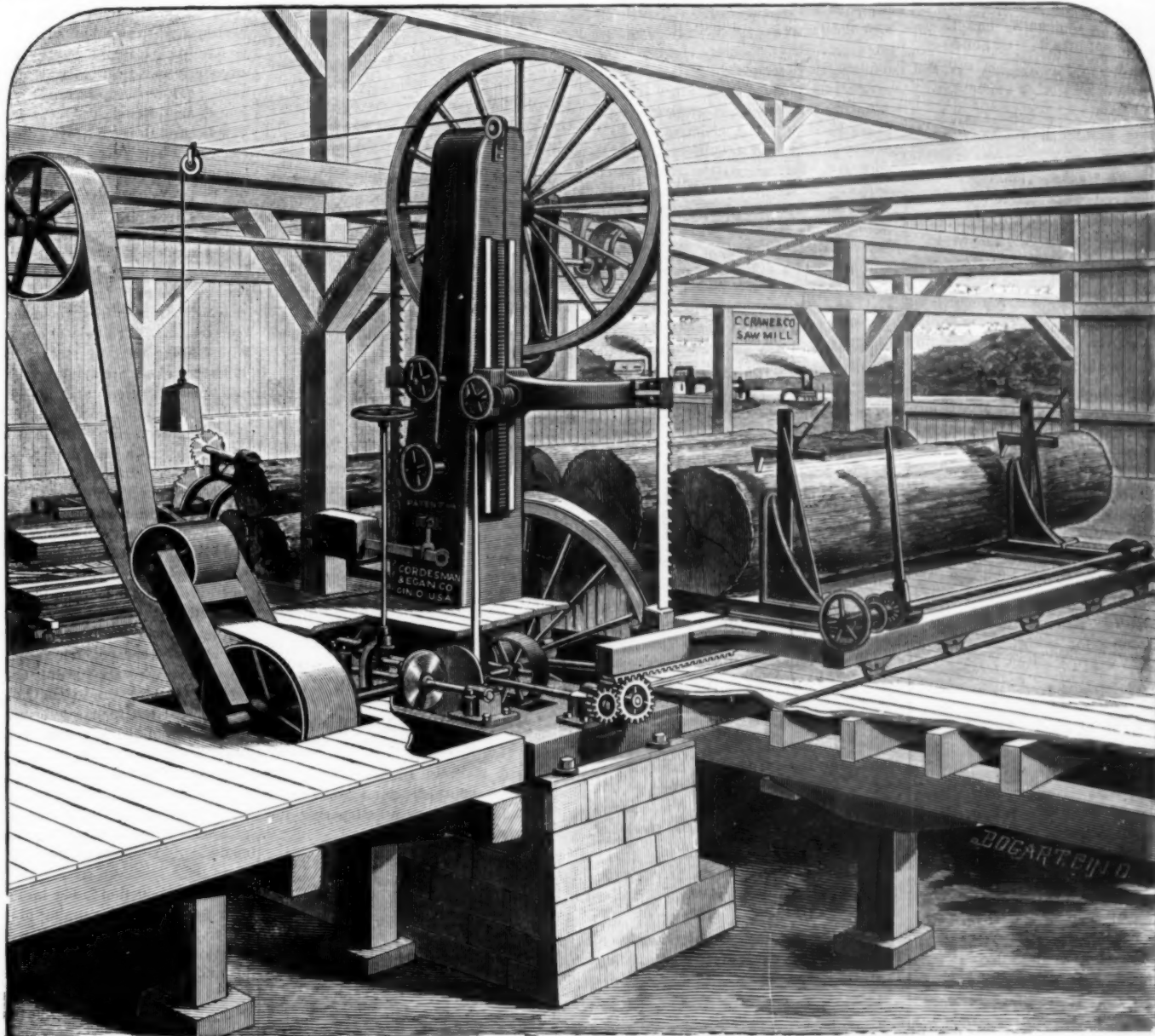
revolutions per minute. The axles are of 4-inch steel, and run in self-oiling boxes of great length, lined with the best Babbitt metal. The wheels, 78 inches in diameter, are made of glued-up hard wood, and are of the greatest strength. Outside bearings to the axles are on each wheel, so that the wheels run perfectly between bearings.

The feed is a friction disk, and can be changed instantly by the hand lever from 0 to 100 feet lineal per minute, or equivalent to a 6-inch feed, and the return motion of the carriage may be 300 feet if desired. Every adjustment on this machine can be made from the working side, so that the operator never has to leave his place. The best patent head blocks, carriage and trucks, and rolls, as well as one Perin blade, 6 inches wide, together with wrenches, go with each complete machine.

## List of Patents.

The following patents were granted to citizens of the Southern States, bearing date May 6, 1884. Reported expressly for this paper by Louis Bagger & Co., mechanical experts and solicitors of patents, Washington, D. C.

- 298,916. Anderson, C. B., Maysville, Ky. Fire-escape.  
 298,370. Ar her, B. F., Marietta, Miss. Fertilizer distributor.  
 298,000. Blair, Jno. C., Louisville, Miss. Bottling machine.  
 297,171. Carr, Jas. W., Richmond, Va. Car-axle box.  
 298,180. Cook, Christian, Baltimore, Md. Coal bucket.  
 298,181. Cox, Jos. M., Richmond, Va. Drawers.  
 297,976. Duehr, Jno. C., Newport, Ky. Watch-case counter.  
 297,977. English, Robert, Austin, Tex. Oil-can.  
 298,195. Gardner, E. T., Rocky Mount, N. C. Saw mill feed mechanism.  
 298,299. Gladney, R. D., McCloudy, Miss. Separator for peas, &c.  
 298,985. Golden, T. E. & J. P., Columbus, Ga. Shaft-coupling.  
 298,061. Golding, William, New Orleans, La. Steam engine.



PATENT BAND SAW MILL.

have to leave his place. The feed is a friction disk, and is very powerful and reliable. The company have put quite a number of them into mills in various sections of the country, and on different kinds of wood, and have received the most flattering reports of their working. C. Crane & Co., of Cincinnati, from whose mill this illustration was taken, have just put in another one, taking out the circular mill shown on opposite side of the log-way in the illustration. Anyone running a circular mill can make the change to a band saw mill without taking out his carriage or head-blocks, by simply taking out the circular and putting the band in its place, and attaching pinion to the end of the feed shaft of the band mill. This machine is coming into greater use every day, as the kerf taken out is very small and the lumber

years, and have put all our experience and knowledge to the best account, and have introduced improvements and conveniences highly favorable to the preservation and durability of the blade. Our patent for adjusting the upper wheel so as to guide the saw to any path, our patent compound weighting levers, patent guide, etc., are all embodied in this machine, and we have no hesitation in saying it is superior to any other made.

With this preface we will explain the machine presented: The base is very solid and heavy, and carries the main column, the gears, feed-shafts, as well as the lower boxes and shafts. The column is made tapered and of extra strength, and is fitted to the base on a planed surface, and stands perfectly solid, requiring no bracing of any kind, even when wheel has a speed of 425

The Band Saw Mill, as made by us, is no longer an experiment—it has come to be a standard machine, and we guarantee it to stand up and do any kind of sawing.

We have a great many of these mills in operation by parties who have taken out the Circular Saw Mill, and many still use the circular saw on one side of the logway and a band saw on the other."

For cuts and prices of this or other improved wood-working machinery, address The Egan Co., successors to Cordesman & Egan Co., 228 to 248 West Front street, Cincinnati, O.

**NOTE** If you are not already a subscriber to the BALTIMORE MANUFACTURERS' RECORD, send us \$3 and you will receive it regularly for one year or six months for \$1.50.

- 298,080. Holloman & Green, Kingston, Texas.—Picture-case for tombstones.  
 10,474. Liddell, W. J. F., Charlotte, N. C. Circular saw mill. (Release.)  
 298,005. Lutz, F. F., Louisville, Ky. Car-coupling.  
 298,007. Mann, J. H., Crafton, Texas. Locomotive wheel.  
 298,010. Mayfield, S. B., Palestine, Texas. Car-coupling.  
 298,226. O'Daniel, J. D., Flatonia, Texas. Cotton press.  
 298,035. Pascoe, C. R., Louisville, Ky. Combined bottling and whipping can.  
 298,334. Rios, A. C. de los, New Orleans, La. Propelling apparatus for vessels.  
 298,033. Skaggs, W. J., Montgomery, Ala. Car-coupling.  
 10,477. Starke, P. H., deceased; A. G. Starke, Richmond, Va., executrix. Plow. (Release.)  
 298,321. Stuck, G. A., Selma, Ala. Fire-hose.  
 298,135. Taylor, G. R., Louisville, Ky. Propelling canal-boats.  
 298,312. Tracey, J. C., Baltimore, Md. Drawers.  
 298,357. Vall, T. C., Topeka, Kansas. Essel.  
 298,334. Warren, C. C., Lodi, Miss. Cotton-gin gearing.  
 298,140. Welling, John E., Georgetown, Ky. Water-cooler.  
 298,331. Youngman, C. A., Louisville, Ky. Elevator.

# CONSTRUCTION DEPARTMENT.

We publish, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

The St. Joseph Orphan Asylum, Louisville, Ky., will put up a \$10,000 building.

G. Hunter & Son, Jacksonville, Fla., will put new boilers and other machinery in their lumber mill.

Mitchell & Tranter, Kentucky, will enlarge rolling mill.

F. Cantrell & Co., Spartanburg, S. C., have commenced work on the building for their foundry and wood-working shops.

The Burnham Grate Co., the organization of which was lately reported, will build their large foundry for making grates, mantels, &c., in Birmingham, Ala.

The Birmingham (Ala.) Cotton Mill Co. have added \$30,000 to their capital and will complete new building.

It is reported that the Conrad Hill Gold and Copper Mine and the Dodge Hill Mine, both in Davidson county, have been sold to an English company who will put in new machinery.

V. E. Schwab, M. Salsholtz and W. T. Linck, of Columbia, Tenn., will erect a distillery.

Clay & Hines, Aiken, S. C., have purchased a planing mill in that town, and will enlarge and add new machinery.

Miles Griffith, of Haverstraw, N. Y., has selected a location for his proposed paper mill in Salem, N. C.

Water-works and gas-works will be built in Sheffield, Ala., by Sheffield Land, Iron and Coal Co. of Alabama; postoffice address, Tusculumbia, Ala.

The new car-wheel works to be built in Birmingham, Ala., as previously noted, have capital of \$50,000. Among those interested are C. C. Drake, of Detroit, Mich.; P. B. Warner, Covington, Ky., and W. B. Seaton, Greenup, Ky.

L. P. Thomas, Jr., of Atlanta, Ga., and Messrs. Geo. M. T aylor and George W. Duncan, of Washington, D. C., will build large tobacco factory in Danville, Va.

Incorporated in Kentucky—the Lexington Elevator Co.

L. H. McKinstry, of Minnesota, will probably start a peanut factory in Claremont, Va. Claremont Manf. Co. can probably give particulars.

A. W. Montgomery and W. C. Orr, of Talladega, Ala., and others will start shingle mill. Have purchased part of machinery.

Mr. — Gerbig, Hagerstown, Md., will enlarge soap works.

Emmert & Co., of Hagerstown, Md., have prepared plans for their grain elevator, previously reported.

The Riverside Furnace at Benwood, W. Va., will undergo repairs.

The B. & O. Railroad will establish large brickyards at Abingdon, Md.

The Southern Pump Co., of Nashville, Tenn., will erect two saw mills, sash and blind factory and planing mill at Sheffield, Alabama.

The Texarkana Foundry and Machine Works, Texarkana, Ark., organization of which was lately reported, will have capital stock of \$500,000. President, J. H. Droughn; vice-president, L. W. Lloyd; secretary and treasurer, G. W. Fouke. Work on buildings will be commenced at once.

P. L. Terry & Co., Roanoke, Va., have commenced to build a roller-process flour mill,—capacity 125 brls. a day.

A. B. Tavel, of Nashville, Tenn., will start large brickyard at the new town of Sheffield, Ala.

The Salem & Southwestern Railroad Company has been organized at Salem, Va., with the following officers: R. H. Catlet, president; R. H. Logan, vice-president; John E. Pew, secretary; directors, J. C. Langhorn, S. F. Simmons, of Salem; Samuel Spencer, of Baltimore, president of Valley Railroad; C. A. Calhoun, of Montgomery county, and J. C. Green, of Baltimore, Md. The line extends from Salem southwest to Asheville, N. C., through the richest mineral belt of Virginia and North Carolina. At Salem it will intersect the Valley Railroad, which is finished from Baltimore as far South as Lexington, Va. From that point to Salem, a distance of about fifty miles, nearly all of the grading and masonry work is completed. The proposed line, it is said, will shorten the distance between Baltimore and Atlanta about 200 miles.

The Elkin Manufacturing Co., Elkin, N. C., after adding new machinery to their cotton mills, are now building new flouring and corn mills.

Wm. Wyant, near Cannelton, W. Va., will open a new coal mine and build coke ovens.

The Carver Bros., Coal Valley, W. Va., will open new mines and enlarge operations.

Incorporated at Calera, Ala., by Dr. Chas. Gibson, of Chicago, and Thos. Bradley, of Elmira, N. Y.—The Nottingham Earthenware, Chemical, Glass and Manufacturing Co., capital \$125,000, to manufacture earthenware, glass, &c.

The Nottingham Land, Furnace and Manufacturing Co. has been organized at Calera, Ala.,—capital, \$300,000,—by G. F. Anderson, A. J. Fox and Wm. Anderson, of Niles, Mich., and J. D. Hardy, of Calera, to erect iron furnace, &c.

The Temple Water-Works Co., Temple, Texas, will spend about \$6,000 in enlarging work.

It is reported that Gesul Carughi, of Hoboken, N. J., will put up a silk factory in North Carolina.

The Cumberland Steel Works, at Cumberland, Md., will probably enlarge.

Incorporated—The North Texas Land and Timber Co., near Wayne Station, Cass county, Texas. Capital, \$20,000.

A. C. Houston, Richmond, Va., will build the First Presbyterian Church, at a cost of \$18,500.

The Bright Gold Mine, in Montgomery county, N. C., has been sold to Northern capitalists, who will work it.

Allen Howell, Waynesville, N. C., is preparing to build his large tobacco warehouse, and the plans are being drawn for another to be erected by the Planters' Tobacco Warehouse Co.

Machine shops for a branch road are to be built at Monroe, La., by the Cincinnati, New Orleans & Texas Pacific Railroad.

Mr. — Carter, of Tavares, Fla., will build sash, door and blind factory, corner of Mill and Irma streets of that town.

F. J. Miller has broken ground at Carrollton, Ky., for a new carriage shop.

The new mill of E. L. Dantzler, to be erected at Moss Point, Miss., as previously noted, will be built by the Filer & Stowell Co., of Milwaukee.

The Tennessee Handle Factory Co., whose works were lately destroyed by fire, have commenced to rebuild on a much larger scale.

The Louisiana Fibre Working Co., of New Orleans, expect to add \$100,000 to their capital and build a mill to make paper from bagasse. Col. Louis Bush is interested.

A company has been organized in Memphis, Tenn., to manufacture a new type writer invented by G. R. Anderson, of that city.

G. J. Boney, Wilmington, N. C., is getting machinery in place for his large corn and hominy mill, previously reported.

Col. J. M. Trice, Okolona, Miss., is president of the new \$10,000 cotton compress company previously reported as organizing in that town.

Judge Folk, of Brownsville, Tenn., contemplates putting up gas works at Trenton, Tenn.

Jackson, Ky., will build a \$15,000 school-house.

W. T. Parker, of Mississippi, contemplates erecting a wheel barrel factory in Anniston, Ala.

Ground has been purchased in Knoxville, Tenn., for the Knoxville Woolen Mills Company's mill, which will be of brick, 2 stories high and 300 feet long.

Riter & Conley, Pittsburgh, Pa., are contractors to build the large charcoal furnace to be erected by the Clifton Iron Co., of Jenifer, Ala., (lately Alabama Furnace Postoffice, Ala.)

The Raleigh Oil and Fertilizer Co., of Raleigh, N. C., previously mentioned, has elected officers. President, W. G. Upchurch, and secretary and treasurer, S. F. Mordecai. Will try and build mill by early part of September.

Hume & Bros., of Beaufort, S. C., will extend their phosphate-mining operations and put in machinery for preparing the rock for shipment.

Work on the furniture factory previously reported to be built at Morilton, Ark., will commence very soon. H. Buttenburg, P. Dorffer and Michael Sattler are interested.

Gas works costing \$45,000 will probably be built in Palestine, Texas, by A. A. Stevens, W. S. Wattis, J. T. Jones, and others.

McDuffie & Son's saw mill, Keyser, N. C., has been injured by boiler explosion.

Reported that a cotton factory will be built at Snowville, Va.

G. G. Potter has purchased a factory building at Quitman, Ga.; will enlarge it and put in machinery.

Mud River Coal Co., capital \$500,000, has been incorporated at Bowling Green, Ky. Will begin mining at once.

The Merchants and Manufacturers Association, Norfolk, Va., will probably erect a \$40,000 building.

The La Grange Oil Mill, La Grange, Ga., L. J. Render, president, will add new oil presses, a new gin, and also a fertilizer factory.

Contract has been let for building the roller flour mill in Comanche, Texas, previously mentioned.

## BURNED.

Can factory of Kirwan & Taylor, Baltimore; loss, \$10,000.

Flour mill of Henry Record & Son, near Fallston, Md.; loss, \$10,000. Will rebuild.

Machine shops of M. Rudasill, Shelby, N. C.; loss \$3,500.

## Textile Markets.

The determined policy of the manufacturers of dry goods, carpets, silks and hosiery to restrict production within assured market requirements is having a favorable effect, and developing a more healthy tone in the textile trade. Buyers generally have been led to expect a great overstocking of the market and a race among manufacturers and commission houses for the trade. The decided course adopted and pursued in New England and elsewhere has revived confidence, and, though not stimulating demand, is preparing the way for a steady, satisfactory fall trade at moderately remunerative prices.

The manufacturers of cotton goods report fair demand under restricted output. Brown and bleached shirtings and cotton flannels are moving in a small way at generally firm prices to meet current requirements. Print cloths are weak, notwithstanding receding stocks. Gingham and seersuckers are moving very freely in both manufacturers' and jobbers' hands. Orders for woolen goods are placed very slowly. Buyers are low in stocks and have been waiting for numerous elements of trade uncertainties to be removed. The markets are in a condition to take heavy supplies of fall and winter woolen goods, but these requirements will be placed cautiously, in conformity to the conservative policy which has controlled the trade all along. There is nothing in margins to tempt heavy production.

Hosiery manufacturers are very quiet; here and there a concern is making full time. Some few are rushing out samples for the fall trade, and some houses have already sent out their salesmen. Restriction is maintained in several hosiery centres. Stocks at Cohoes, by July 1, will be about one-half what they were a year ago. Narrow margins do not repress enterprise or check the spirit of improvement and expansion. Carpets are moving slowly from manufacturers' and jobbers' hands, and there is a general feeling in favor of guarding production. The Ingrain carpet men are nearly all running along nominally on full time, but not crowding their hands or their capacity. The Brussels manufacturers are not anxious to increase stocks at present. It is less a question of cost than over-production in the present strike. Prices paid to female labor in Eastern carpet mills is 4½ cents to 5 cents per yard.—Philadelphia Press.

The Planters' Hoe Co., Troy, N. Y., are making extensive additions to their buildings and machinery, necessitated by the increasing demand for the Herrington potato-digging machine, lately illustrated in the MANUFACTURERS' RECORD, and which is being rapidly introduced into potato-growing sections. This machine seems to have proved a great success.

## LOCKWOOD, GREENE & CO. MILL ENGINEERS

Office, 65 Westminster St., Providence, R. I.

Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.



## MANUFACTURING.

Subscribe to the *Baltimore Manufacturers' Record*. Price \$3 per year.

### BALTIMORE.

MESSRS. W. J. CLARK & BRO., N. Holliday street, manufacturers of hydrants, have just received a number of large orders from the city. Of late their business has been very satisfactory in the South.

THE Baltimore Steam Packet Co. at Union Dock have placed in position a "Ball engine" and machine for electric lighting by the Edison system, which will soon be in operation. The electric light of the Baltimore & Ohio Co. at Locust Point has been in satisfactory operation for some time, and is also run by a Ball automatic engine. Several more of these engines will soon be at work at other points in the city. Some important advantages are claimed for these engines, owing to some new features they possess, a description of which can be had by applying to the agent, W. C. Wolfe, 144 W. Baltimore street.

MR. W. J. JOHNSTON, N. Holliday street, manufacturer of copper kettles, reports business as exceedingly brisk, especially in the city. Since the first of the year his business has shown a large increase compared with preceding years.

MESSRS. L. P. CLARK & SONS, manufacturers of hydrants, street washers and closets, have on hand many orders for their goods.

MESSRS. JAS. MURRAY & SON, 40 to 44 York street, have been very busy during the past month, building new machinery for brick manufacturers. They have also quite a liberal amount of repair work on hand.

MESSRS. R. M. SPEDDEN & CO., South Broadway, have just begun work on two steamships, which are undergoing repairs, and report engagements made for others. They are also building two tug boats for parties in the city. The repair work department of their shops is crowded.

THE Vulcan Iron Works, of this city, well-known for many years, have resumed operations under the ownership of Mr. H. R. Hazlehurst. These works are fitted with a very complete plant, the machinery and tools being of the best character. For many years the Vulcan Works have been turning out a large amount of heavy work, bridge building, water-works machinery, iron vessels, &c., as well as the general run of machinery, such as boilers, engines, tanks, &c., and for all kinds of such work they are now fully equipped. Estimates will be furnished by Mr. Hazlehurst upon application.

MR. W. C. WOLFE, a mechanical engineer and draughtsman, offers his services, through an advertisement in to-day's paper, for making scientific tests and investigations of engines and boilers, to secure the greatest economy of steam and fuel. Mr. Wolfe is also agent for the well-known Ball Automatic Cut-off Engine.

As a fuel for manufacturers coke is very valuable, provided it is of good quality, and then it gives much satisfaction, but an inferior grade simply prejudices consumers against coke in general. The Connells-ville coke is everywhere accepted as the best that can be had, and the heaviest coke manufacturer in the Connells-ville region, as well as in the country, is the well-known H. C. Frick Co. Their coke is regarded as the standard. It can be had either in the lump or crushed. Within the last few years this coke has come into very general use in Baltimore among manufacturers, as well as by private families. It has given excellent satisfaction, consumers finding it of the best quality. Mr. W. J. Chapman, corner York and William streets, controls the Frick coke in Baltimore.

### IN GENERAL.

A FEW moments call by a representative of the *MANUFACTURERS' RECORD* at the works of the *Armington & Sims Engine Co.*, Providence, R. I., elicited the following information as to work being done: They are quite busy getting up all sizes of their celebrated quick-acting steam engines for electric lighting and other work. The new government cruisers will be furnished with the *Armington & Sims* engine for electric lighting; also the magnificent new yacht built by the *Astors*. The *Saratoga Electric Lighting Co.* have ordered two engines 9 $\frac{1}{2}$  diameter, 12-inch stroke, about 50-horse power each. The *Armington & Sims Co.* are building for *Lee, Blackburn & Co.*, of Lawrence, Mass., a 90-horse power engine, 12 $\frac{1}{2}$  diameter, 20-inch stroke. The *Arlington Mills* at Lawrence have just started up (May 8th) a 200-horse power engine of this make. The *Armington & Sims Engine Co.* now manufacture all the large sizes of their engines, a work which was until recently a specialty of the *Builders' Iron Foundry* of Providence.

HOWARD, BULLOUGH & RILEY, of Boston, have received order for one of their improved cylinder slashers from the *Tallassee Falls Mfg. Co.* This machine has all their patented improvements, including the "slow motion," "revolving presser," etc.

### What Protection Has Done.

From the speech of Hon. William McKinley, Jr., of Ohio, on the Morrison Bill, April 30.

The growth of this country in the last twenty years is the wonder of the world. Our manufacturing products have increased from \$1,885,000,000 in 1860 to \$5,369,000,000 in 1880. The agricultural development shows a like gratifying progress. There was an increase in the acreage in farms from 407,000,000 acres in 1860 to 536,000,000 acres in 1880, an increase of 32%; and in the value of farms an increase from \$6,645,000,000 in 1860 to \$10,197,000,000 in 1880. We started in 1830 with 23 miles of railway. In 1860 we had 30,635 miles; in 1880 we had 93,545 miles; in 1881 we had 103,334 miles; and now we have about 120,000 miles. Our material wealth has increased beyond parallel in everything which goes to make a nation strong and self-dependent. The energies of our people have opened up new avenues of industrial development and have overcome what seemed insuperable barriers. The finances of the country were never in better condition than to day.

Our exports during the last fiscal year were over \$804,000,000, as against \$733,000,000 during the preceding year, an increase of over \$71,000,000. The value of the exports of manufactures from the United States during the last year was \$112,000,000 in round numbers, as against \$103,000,000 during the preceding year, and exceeded the exports of any previous year in the history of the country. Our exports have exceeded our imports over \$100,000,000, so that the balance of trade is in our favor. We are rapidly reducing the national debt, and have been doing so for years at an unexampled rate. Interest charge has been reduced, and we present the spectacle of a government, in less than twenty years from the close of a great, destructive and wasteful war, with unprecedented credit and a surplus of revenue in the treasury.

This has all been accomplished during an era of protective tariffs, which the free traders characterize as extortion and robbery upon the people, destructive of their energies, and obstructive of industrial progress and national development. How it contrasts with the low tariff period from 1847 to 1860, when we had practically a revenue tariff, such as is advocated by the democratic party of to-day. It was a period of universal business depression,

deficiencies in the public treasury, when both nation and individuals were compelled to borrow money at the most exorbitant rates of interest.

Agriculture and manufactures should go hand in hand; the one enriches the other, the one trades with the other,—they are mutually dependent one upon the other. There is no conflict of interest. Agriculture increases in its products and its wealth with the growth and increase of manufactures. Prices are better, steadier and more reliable to the farmer with prosperous manufacturing industries employing labor which consumes and does not compete with his products. Impair or destroy our ability to manufacture, strike down any of our great manufactures, and the farmer would be the first to seriously feel the loss. Dismiss the army of operatives from the workshop and send them to the great unoccupied and fertile lands of the West, and the farmer would not only lose just so many consumers or customers, but, more than that, he would find them as his competitors in the field of production.

### Work on the Panama Canal.

MR. A. B. STETSON, Superintendent of the *Pound Manufacturing Company*, Lockport, N. Y., has just returned from Panama, where he has been residing during the last seven months superintending the erection of dredging machinery made by his firm for the *Panama Canal Company*. From Mr. Stetson, who spent an afternoon in this office, we obtained interesting information regarding the progress of the stupendous work of cutting the *Panama Canal*.

The work of constructing the canal is of much greater magnitude than even the engineering world understand. For seven miles on the Panama end, and for three miles at the Colon end, the width of the canal is 676 feet; while for the middle seventeen miles it is 338 feet wide, the whole having a uniform depth of 30 feet. In certain parts the physical features of the country entail tremendously expensive excavations. The *Chagres* river bed is crossed several times, and provision must be made to control the waters of that river, which is a great undertaking in itself, for the river is subject to huge floods during the rainy season, and this water must be kept out of the canal. The line of the canal crosses a hill which is 350 feet high, entailing a cutting of that depth for over three miles. As the hill is all soft material, the top of the cutting is surveyed 1,600 feet wide, and it is doubtful if that slope will be enough to prevent bad earth slides.

A great deal of expensive preliminary work has been done connected with the canal, substantial dwellings and hospitals having been erected. The work has been divided into twelve divisions, and excavating is now proceeding in every division. There are about 20,000 men engaged on the works, most of them being *Jamaica* negroes, and they are miserably inferior laborers. A number of natives are also at work, and they are a shade better than the importations from *Jamaica*, still they are far from being industrious.

Two of the dredging machines made by the *Pound Manufacturing Company* have been at work for several months, each of them taking out 1,300 cubic yards daily. Two more machines are nearly ready. The heaviest machines on the works are the bucket dredges belonging to the *Panama Canal Excavating Company*, of New York. One of these dredgers, which was built at *San Francisco*, has been at work for some time, taking out as much as 7,800 cubic yards daily. Two more of these huge machines have been built on the *Delaware* and sent out. The second to arrive was burnt by accident, but the third one is now ready for work. These machines work admirably in the earth work for which

they were built, but several attempts have been made to apply them to the excavation of rock, boulders and tree-stump covered ground, and there they do not work well.

French interests are all-powerful on the *Panama Canal Works*, all the men doing intellectual and skilled labor employed by the company being French. Machinery that has not been made in France is condemned from the beginning, and every effort is made to discredit its working. American, English and Belgian machinery all fare badly in the hands of these French operators, who are determined to see no great merit in any foreign-made article. They have succeeded in damaging the reputation of every foreign-made machine they have handled, except the American locomotive. The American locomotive is so well adapted to withstand the rough usage of rude construction work that the French engines engaged in the same service were helpless in comparison. The French engineer would abuse and revile the American locomotive without limit, but it kept to work and held the track day by day, while its French rival was in the ditch or in the shop; so the officers of the company were reluctantly compelled to admit that the American locomotive was the best for their work.

The *Panama Canal Company* have now got entire control of the *Panama Railway*, and they are improving the condition of the road bed, which was in extreme bad order. Over 400 men are working on the 27 miles of track, putting down new rails and ties, also draining the road bed.

There does not seem to be much likelihood of the present company finishing the canal. Of the \$114,000,000 originally subscribed for, to complete the work, two-thirds have already been spent, and the real work of excavating the canal has hardly been commenced. The total amount of material to be moved is estimated in the neighborhood of 140 millions cubic yards. Not more than 5 $\frac{1}{2}$  million yards have been moved and the greater amount of that has been confined to earth work and dredging. More than half of the excavation is rock, and that has hardly been touched yet. The farther this work proceeds, the magnitude of the enterprise appears the greater. Extraordinary exertion will be needed to finish the work within ten years instead of four, the time now spoken of.—*American Machinist*.

### Heavy Failures.

Just as the last forms of our paper are ready for the press, the telegraph brings word of many heavy failures in New York. Wall street is crowded with excited people, and the prospects are decidedly unpleasant looking, but possibly worse troubles may be averted.

MR. JOHN R. EDWARDS, blank book manufacturer, having found his quarters at the corner of Baltimore and North streets inadequate to the demands of his increasing business, has removed to the new warehouse 160 and 171 West Lombard street, corner Sharp. With ample room, all the latest improved machinery, a long practical experience and skilled workmen, he can produce work equal to that of any establishment in the country, and at reasonable prices. He carries in stock an extensive assortment of blank books and a full line of stationery.

WHEN you go to Cincinnati stop at the *Palace Hotel*. You will find comfortable well-furnished rooms, good meals, polite and accommodating attendants,—everything, in fact, calculated to promote your comfort and make your stay pleasant. It is a new hotel, and everything about it is new, fresh and attractive. The charges are as low as those of any other first-class hotel.

## The Garden Spot.

### Spartanburg and Her Industries.

SOUTHERN DEPARTMENT  
BALTIMORE MANUFACTURERS' RECORD,  
SPARTANBURG, S. C., May 9, 1884.

This town of 4,500 people, Spartanburg, in Spartanburg county, South Carolina, is one of the important, progressive and promising places of this booming State.

This county is the fourth manufacturing county in the State, and is stated by the Charleston News and Courier to be the first in cotton factory capital. It is an important railroad point, being directly on the line of the main trunk line of the Richmond & Danville Railroad, between Atlanta and Charlotte, 200 miles from Atlanta and 65 miles from Charlotte. It has for years been connected with Columbia by a direct road—the Spartanburg & Union Railroad, which joins the Columbia & Greenville Railroad at Alston. These two roads are now under the management of the Richmond & Danville system. In addition to this, the Spartanburg & Asheville Railroad is completed 50 miles to Hendersonville, and the remaining 21 miles from Hendersonville to Asheville are nearly graded. The Richmond & Danville Road has leased this valuable line, which gives a direct Western outlet, and will complete the link this year. But this is not all. The Augusta & Knoxville Railroad, running North and South and controlled by the Central Railroad system, is completed to Greenwood on the Greenville & Columbia Railroad, 68 miles from Augusta, and graded from Greenwood to Spartanburg through Laurens 60 miles, and this link will be completed this year. It is also proposed to extend this road to Rutherford or Shelby in North Carolina, and a company has been organized for this purpose, with Mr. L. Mills as president, and the survey is being made.

It will thus be seen what an important railroad place Spartanburg will be. To all of these railways the Spartanburg people have liberally contributed.

Spartanburg county is both a fine manufacturing and farming country. It has 94 manufacturing establishments divided as follows:

	No.	Hands.	Capital.	Products.
Cotton mills....	7	1,100	\$1,043,000	\$1,300,000
Flour, &c., mills..	50	100	50,000	75,000
Foundries.....	2	75	30,000	30,000
Lumber mills....	29	80	15,000	75,000
Others.....	15	40	16,000	20,000
Total.....	94	1,395	\$1,144,000	\$1,410,000

There are seven cotton mills, with a capital of \$1,043,000, consuming annually 16,820 bales of 8,410,000 pounds of cotton; running 37,680 spindles and 9.5 looms, and making 1,869,275 pounds of yarn and 16,273,500 yards of cloth, at a net profit of 11½%.

The cotton mills are located at Clifton, Glendale, Pacolet, Fingerville, Crawfordville, Valley Falls and Cedar Hill.

I have visited the two new mills—the one at Clifton, built in 1880, of which Mr. Converse is president, and the one at Pacolet, just completed, of which Capt. J. H. Montgomery is the president.

The Pacolet Mill has 10,000 spindles and 300 looms, and makes a finer cloth than is generally manufactured South. It makes a cloth of 4 yards to the pound. This mill site was used for a grist mill and was a dead cross-roads point. The three enterprising gentlemen—Col. Jos. Walker, Dr. Fleming and Capt. J. H. Montgomery—comprising the firm of Walker, Fleming & Co., in Spartanburg, originated this enterprise. Col. Walker selected the site and bought it. These gentlemen raised the money and built the mill. Spartanburg subscribed \$139,000, \$56,000 was raised in other points of Carolina, \$12,000 in North Carolina, and the remaining \$93,000, or less than one-third, was subscribed by Northern capitalists. The place is now a thriving village of 500 inhabitants. The water power will run 25,000 spindles, and

an additional mill can be built and will be built.

The mill cost \$30.12 a spindle. There is room for 2,000 more spindles in the building, which will be put in, and the cost thus reduced to \$26 a spindle. The mill is a model in every respect. It turns out 15,000 yards of cloth daily. Among other points it is shipping cloth to Shanghai, China. The dam is substantial and all ready for a new mill. The foundation for a new mill is also partially ready. The dam and foundation of the mill are built of rock quarried right out of the bed of the river. A reservoir above the mill of 120,000 gallons of water furnishes protection in case of fire. The work was built under supervision of Capt. J. H. Montgomery, the president, and is a monument to his fine management.

The Clifton Mill has 21,000 spindles and cost \$600,000. Clifton has a population of 1,400 people.

The father of cotton mills in this section was Dr. James Bivings. He built the mill at Glendale. This place was called Bivingsville, in honor of this old citizen, but after his death the mills were renewed and the name of the place changed from Bivingsville to Glendale. Dr. Bivings also built and run for many years the mill at Crawfordville.

There are in Spartanburg county 2 iron foundries, 3 brick-yards, 4 wagon factories, 2 tanneries, 1 sash factory, 1 line kiln, 1 distillery, &c. There is also a soapstone quarry and a gold mine.

There are 153,087 acres of land in cultivation. Much attention is given to improved stock. There are in the town of Spartanburg two Jersey cattle farms, one by Mr. S. Miles of 30 head, and one by Mr. Irwin of 7 head. In the county are 200 registered Jersey cattle. Many of the farmers and town citizens have their registered Jersey milk cows. Col. Jos. Walker keeps one, a very fine heifer.

Quite a number of new, elegant, modern residences has just been completed, costing from \$10,000 to \$15,000. Among these are two elegant dwellings by Hon. John B. Cleveland and Dr. Jesse Cleveland, wealthy brothers. Col. Jos. Walker and Dr. Fleming are building handsome homes. Spartanburg has a flourishing male college with 125 students—Wofford College, under charge of President Carlisle and a fine faculty. There have been here a female college and a military college. The buildings are still standing, and these institutions will probably be reopened.

I took a trip up the Spartanburg & Asheville Road to the famous Flat Rock settlement, near Hendersonville. This Flat Rock section has been for half a century the summer home of the distinguished men of South Carolina. The settlement is filled with beautiful homes and exquisite grounds, that have been owned by the Pinckneys, Memmings, Middletons, Draytons, Barings, Kings, Rutledges, and other notable families. Mr. Memminger, ex-secretary of the Confederate Treasury, still spends every summer at the beautiful home that he built 40 years ago, and drives up a magnificent avenue of stately pines, winding for a quarter of a mile, that were put out by himself. He has a superb lawn rolling down to a clear lake, and the view from his house is very fine. The most noted place is a farm of 400 acres, with a picturesque rock castle, located upon a beautiful eminence, that was improved by a wealthy French nobleman, the Count du Choiseul, who was for a while consul at Charleston. His house cost him \$20,000. He had conservatory and graperies. He entertained in princely style. Upon his death the place was sold to a Col. Urquhart, of Louisiana. Four years ago it was bought by Col. Jos. Walker, of Spartanburg, who has put it in fine condition.

I rode down the road on the engine. The track runs through a gloriously pictu-

resque country. For 3 miles the grade is 370 feet to the mile, and winds around the mountain gorges, curving through the clouds, spanning great chasms, and catching glimpses of scenery of supernatural loveliness. This is a wonderfully lovely region, and possesses an electrically bracing climate. It is the summer resort unsurpassable. There is a good hotel built here. The elevation is about 2,500 feet above the sea level. The completion of this road not only opens up as good a summer country as the world affords, but connects the seaboard with the West by a new great trunk line. I. W. AVERY.

## Tin in West Virginia.

HUNTINGTON, W. VA., May 8, 1884.

Editor Baltimore Manufacturers' Record:

Your favor duly received. I will with pleasure give you my experience in the mineral regions of West Virginia. I purchased in 1865 a tract of land located in Mason and Cabell counties, of 12,500 acres. In September, 1879, I commenced to explore for minerals; on the 29th of the month discovered what I supposed was silver, erected a rude furnace only 8 inches inside, made an assay, reduced the ore one hour and forty minutes; got out about one pound; sent it to New York, claiming for it silver. Ball, Black & Co. said "not silver, but tin of a superior quality." Subsequently made various assays, with like results. Last September I blasted out some 20 tons of the tin stone, partially roasted. Winter and the floods of the Ohio river stopped all our work; not by the water, for our mines are above the highest water.

The tin stone crops out on a high hill, thence traced regular in veins and boulders, one above another. We traced it some five miles; it would crop out occasionally within the space named. The tin stone is inexhaustible enough to last 800 years, more or less, for a dozen furnaces to run day night and on our lands. We find cinnabar in large quantities, millions of tons, very rich. I have sent to Cincinnati for crucibles to reduce the nickel, and iron retorts to get out the quicksilver. We are preparing to open the works on a large scale. We expect to get our crushers and machinery under contract in the course of the next 60 days. This tin stone being the first in quantity discovered in the United States. I believe it is conceded to be the first tin mine in America. The writer was the first to discover it and feels some pride in that fact.

I am giving you the particulars fully, and as we progress will give you further information in detail.

I have nickel; we tried that and found it rich. When the crucibles come up from Cincinnati we will reduce the nickel and give the quantity to be found in the ore.

We formed a company, \$3,000,000 capital, non-assessable, fully paid up.

Yours truly, R. N. ROBBINS.

## Some North Carolina Items.

HOLMAN'S MILLS, N. C., May 7, 1884.

Editor Baltimore Manufacturers' Record:

As you kindly solicit information as to what has been done and is doing in the South, I thought that I would volunteer some points that might be of interest about the two places of Snow Camp and Holman's Mills.

First—Snow Camp. We have Cane Creek Friends' Church, where Cornwallis and his troops camped on their retreat from the battle of Guilford; next, Dixon's Mills, of Revolutionary fame, where the British soldiers helped themselves to grain, but failed to get either meal or flour, as the miller had left and had taken the precaution to let the stones together, and, as there was no miller amongst the British

soldiers, they were unable to get the mill to run, and, after expending all their skill on the mill, they left without either meal or flour.

This same mill is now owned by H. W. & T. C. Dixon, and is to have a general repair this season. Next, Snow Camp Foundry and Machine Shops and Saw Mill, owned and operated by Dixon & Co.; Dixon's Tannery, owned and operated by S. Dixon & Co.; with other mills and tanneries.

Second—Holman's Mills. We have Fairmount Foundry and Machine Shops and Saw Mill, owned and operated by Stafford, Henley & Co., at which place the first circular saw mill in North Carolina was built in the year 1854, and at which place first-quality turbine water wheels and circular saw mills can now be had; next, Clover Orchard Cotton Mills, Flouring and Saw Mills, now owned and operated by the Holman Manufacturing Co.; next, the Stout Whetstone Quarry, of excellent quality, with soapstone near by; then, gold and iron ore, &c., with good or fair land, and quantities of oak and other kinds of timber. The tendency of this section is upward, and I think capital could find safe investment here. Yours respectfully,

N. S.

## The Value of Construction Items

Manufacturers fully appreciate the value of good, new, trade items—items that are crisp and to the point. "I take a Baltimore paper," remarked a large pulley manufacturer the other day, "simply because of the valuable trade items it contains, and that paper," pointing to a copy of the American Machinist, "for its manufacturing notes, though, of course, there are people who take it for its mechanical matter. Items relating to fires, business changes and improvements are of the most value to me; they offer me opportunities to introduce my goods where they have, perhaps, never been used."—St. Louis Age of Steel.

[The Baltimore paper referred to is the MANUFACTURERS' RECORD.]

ALTHOUGH not positive about it, we believe that the MANUFACTURERS' RECORD was the first paper in the country to suggest the advisability of pecuniary help to the New Orleans Exposition by the national government. The proposed loan of \$1,000,000, which is now almost sure, is, therefore, peculiarly gratifying; and not only the people of the South but the whole country should rejoice at the assurance that this exposition will be a magnificent success, reflecting lasting credit upon the United States. It seems certain that in many respects this exposition will be the grandest work of the kind that the world has yet seen, surpassing in many things even the nation's supreme effort at Philadelphia in 1876.

## Important to Southerners.

Persons arriving in New York via Cortlandt Street Ferry, by taking the 6th Avenue Elevated Train, corner Church and Cortlandt streets, can reach the Grand Union Hotel in 43d street, opposite Grand Central Depot, in twenty minutes, and save \$3 carriage hire. If en route to Saratoga or other summer resorts via Grand Central Depot, all baggage will be transferred from hotel to this depot free. 600 elegantly furnished rooms \$1 and upwards per day. Restaurant the best and cheapest in city. Families can live better for less money at this hotel than at any other first-class hotel in the city.



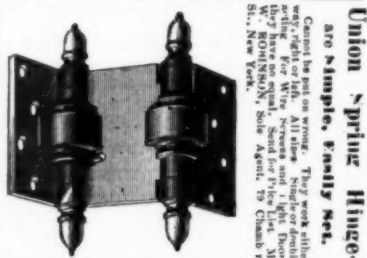




Iron, per.

55 Charlestown St., Boston, Mass.

Black Lamp, coach painters	.....	13	30c
Black Lamp, ordinary	.....	13	15c
Black Ivory Drop, fair	.....	12	15c
Black Ivory Drop, best	.....	12	20c
Black Paint, in oil..... kegs, 6c; asst'd cans, 9c	.....		
Blue Prussian, fair to best	.....	40	40c
Blue Prussian, fair to best, in oil	.....	45	50c
Blue Chinese, dry	.....	7	70c
Blue Ultramarine	.....	15	25c
Brown, Spanish	.....	5	10c
Brown, Van Dyke	.....	5	15c
Green, chrome	.....	8	15c
Green, chrome, in oil	.....	13	15c
Green, Paris	..... good, 20c; best, 25c		
Green, Paris	..... good, 30c; best, 35c		
Iron Paint, bright red	.....	10	25c
Iron Paint, brown	.....	10	15c
Iron Paint, purple	.....	10	30c
Iron Paint, ground in oil, bright red	.....	10	55c
Iron Paint, ground in oil, red	.....	10	50c
Iron Paint, ground in oil, brown	.....	10	45c
Iron Paint, ground in oil, purple	.....	10	60c
Lined Oil, raw	.....	1	80c
Single Boiled	.....		60c
Double	.....		62c
Mineral Paints	.....	3	40c
Orange Mineral	.....		10c
Red Lead, American	.....	8	75c
Red Lead, English	.....	8	75c
Red Venetian, in oil..... asst'd 6c; kegs, 6c	.....		
Red Indian, dry	.....	6	12c
Rose Pink	.....	30	12c
Sienna, American, raw	.....		4c
Sienna, burnt	.....		4 1/2c



**WYCKOFF, SEAMANS & BENEDICT, 281 and 283 Broadway, New York.**



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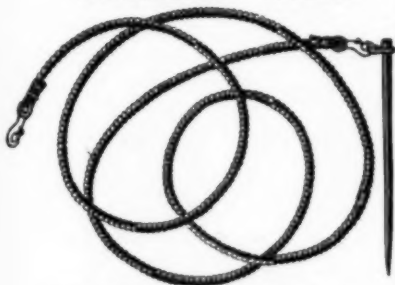
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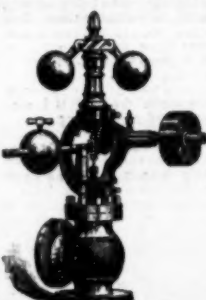
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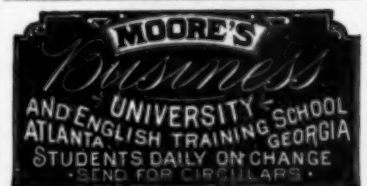
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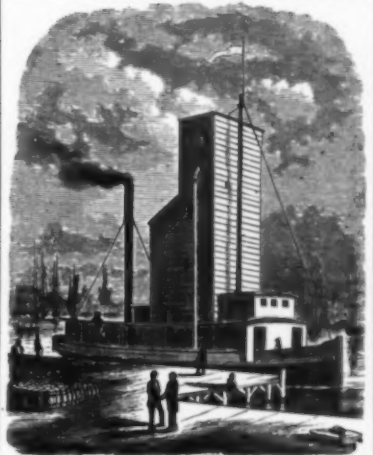
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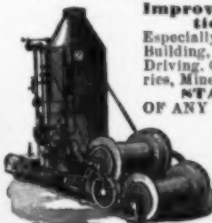
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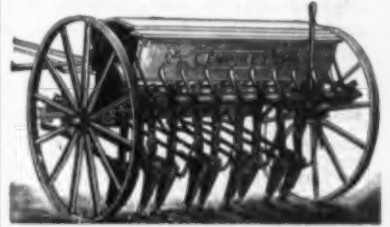
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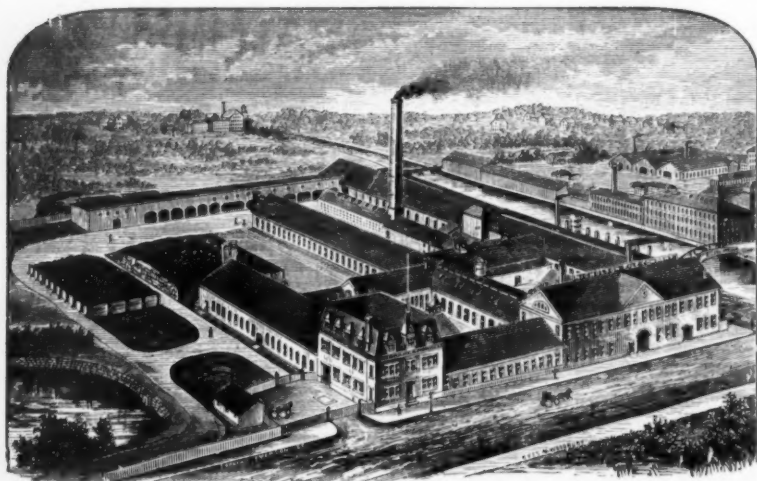
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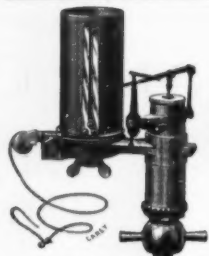
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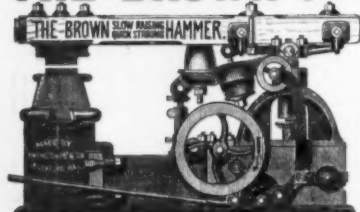
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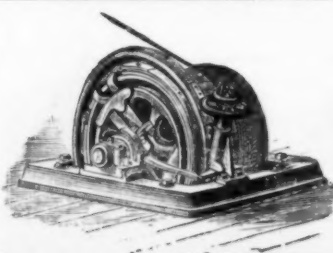
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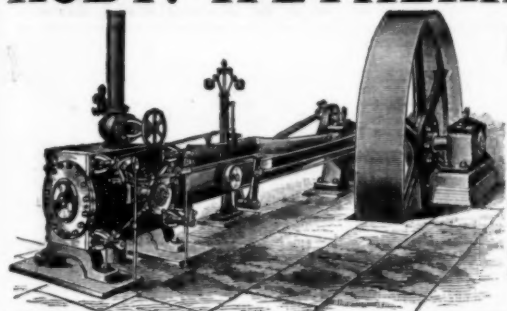
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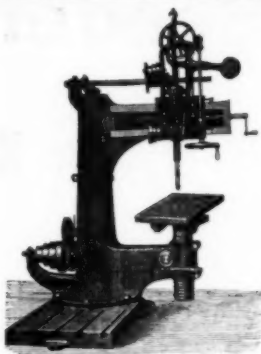
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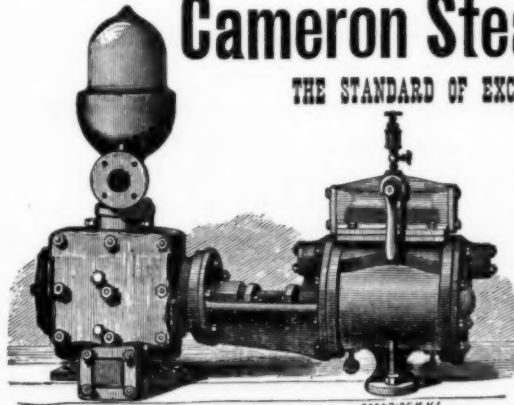
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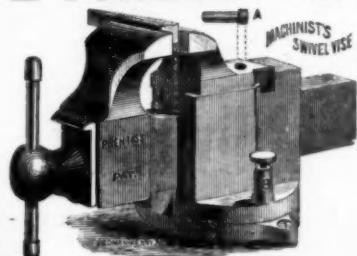
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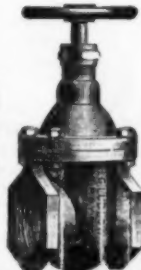
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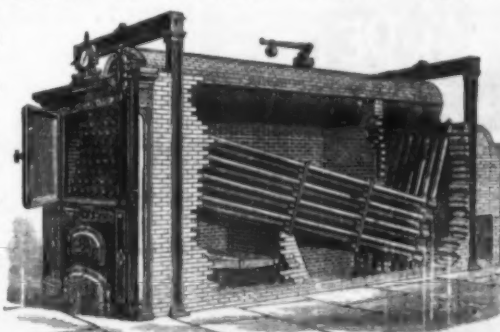
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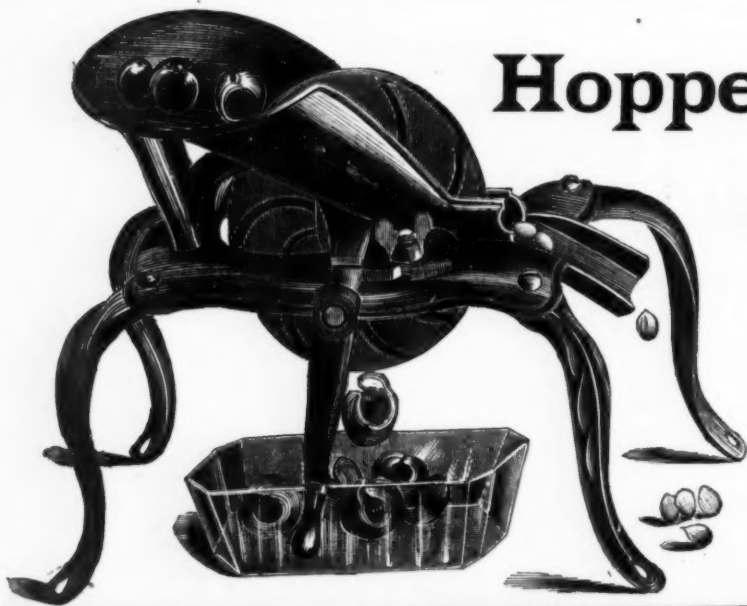
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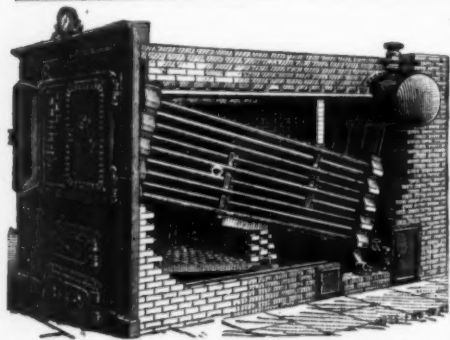
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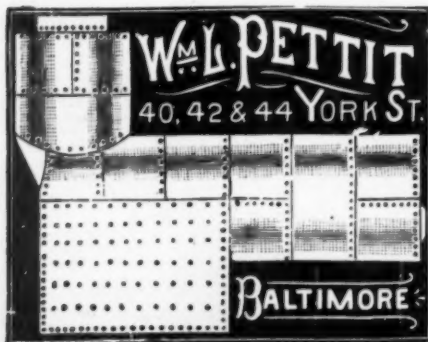
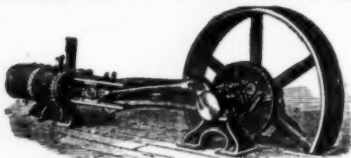
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The only Freezer ever made having three distinct motions, thereby producing finer, smoother Cream than any other Freezer on the market. Acknowledged by every one to be the best in the world. Over 300,000 in use to-day. Outside irons galvanized, but all inside the can coated with Pure Block Tin. Tubs water-proof, machinery easily adjusted and operated. We also carry large stock of Packing Tubs, Packing Cans, Ice Crushers, &amp;c. Send for Price List and Trade Discounts.

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Woodruff's (P. S. & W.) Nos. 100 150 Hales' Nos. 11 12 13 Kieser's No. 55 Kieser's Gem Kieser's No. 82 Kieser's Monarch Heef Shaver, (Enterprise Manf' Co.)	Nos. 100 150 Nos. 11 12 13 Nos. 55 Nos. 55 Nos. 82 Nos. 82 Nos. 82	doz. \$15 18 dis 35 doz. \$37 35 45 dis 50 10 10 2 doz. \$40 40 40 40 40 doz. \$40 40 40 40 40 doz. \$40 40 40 40 40 doz. \$40 40 40 40 40	Chicago Scale Co. Special dis Fairbanks' Scale Co. dis 20 Forey's Scale Co. dis 45 Howe's Scale Co. dis 30 10 Chatillon's Grocers' dis 40 Chatillon's Eureka dis 25 Family Universal dis 50 Family Favorite dis 30 Family Turnbull's dis 30 Scale Beams, List of Jan. 1, 1882 dis 50	Adjust. Box Scraper (S. R. & L. Co.) \$5 50, dis 20 10 Box, 1 Handle, dis 10 Box, 2 Handle, dis 10 Foot, dis 10 Ship, common, dis 10 Wilson Mfg Co. dis 10	Douglas Mfg Co. dis 20 10 Dieton's, dis 40 Charles Mfg Co. dis 40 10 10 Stanley Rule & Level Co.'s V. B. H. dis 50 10 Stanley Rule & Level Co.'s B. H. dis 40 10 Ratchet, dis 35 Clark's Patent, dis 25 Shepardson, dis 25	Flat Head Iron, list Dec. 27, '82, dis 70 Round Head Iron, dis 50 Flat Head Brass, dis 60 Round Head Brass, dis 15 Flat Head Blue add 2 1/2 c to net of invoice. Brass and Silver Capped, dis 40 Japanned, list of Plain screws, dis 20 Coach, Patent (imperial Point), dis 10 Coach, Common or Long, \$40 10 10 Bed, dis 10 Machine, Flat Head, Iron, dis 55 Machine, Round Head, Iron, dis 50 Bench, Iron, dis 50 10 Bench, Wood, Beech, dis 40 10 Bench, Wood, Hickory, dis 30 10 Hand, Wood, dis 30 10 Hand Rail, Sargent's, dis 30 10 Hand Rail, Humason, Buckley & Co., dis 40 10 Hand Rail, Am. Screw Co., list Jan 1, '81, dis 70 Jack (Wilson's), dis 25	SCREEN FRAMES AND FIXTURES. Standard Window Screens No. 1, \$4; No. 2, \$5 Door, No. 5, \$15; dis 40 10 Window Corner Irons, No. 3, dis 40 10 Door, No. 6, dis 40 10 Door Latches, \$ dozen, \$3.00; dis 50 Porter's Patent Window and Door Screen Frames. PER DOZ. SETS. In Im. Blk White, Walnut. No. 20, \$2.75, \$3.25 No. 21, 3.25, 4.00 No. 22, 5.50, 6.75 No. 23, 6.00, 7.50 No. 30, 9.00, 11.00 Porter's Corners— No. 0, Corners and Sticks complete for a three-foot window, \$ doz. sets, \$4 No. 1, Set for Window, \$ doz. sets, \$2.40; Nickel, \$5.62 No. 1 1/2, " " \$ doz. sets, \$2.40; Nickel, \$5.50 No. 4, " " \$ doz. sets, \$4.00; Nickel, \$5.00 No. 4 1/2, " " or Door, \$ doz. sets, \$4.00; Nickel, \$5.00 No. 4 1/2, " " or Door, \$ doz. sets, \$4.00; Nickel, \$5.00 No. 2 1/2, " " Door, \$ doz. sets, \$4.00; Nickel, \$5.00 No. 3, " " \$ doz. sets, \$4.00; Nickel, \$5.00 SHEARS AND SCISSORS. American (Cast) Iron, dis 70 10 Pruning, dis 70 10 Barnard's Lamp Trimmers, \$ doz, \$4.00 Tinners, dis 15 Corn Shears, dis 15 Norfolk Shear Co., dis 75 Jersey Shears, dis 80 J. Wise & Son, Nickel, 50 & 55; Japanned, 60 & 65 SHEAVES Sliding Door, M. W. & Co., list, dis 45 & 2 Sliding Door, R. & E. list, dis 60 10 & 2 Sliding Door, Patent Roller, dis 60 10 & 2 Sliding Door, Pt. Roller, dis 60 10 & 2 Sliding Door, Russell's Anti-Friction, dis 60 10 & 2 Also see Hangers. SHOWELS AND SPADES. Ames, New List, July 1, 1881, dis 15 Griffiths, dis 50 & 65 Remington's (Lowman's Patent), dis 30 Rowland's, dis 30 Kimball's, dis 35 Lippincott, new list, dis 20 Hussy, Blis & Co., dis 15 SHUTTER HINGES. Clark's Improved Shutter Hinge, Nos. 0, 1, 1 1/2, 2, 2 1/2, 3, dis 75 Iron and Brass Hinge, R. & E. list, dis 60 10 & 2 Polished Steel, New List, dis 50 10 & 2 SLEIGH BELLS. Arctic and Polar, dis 30 Loose and neck and body strap, dis 50 SPOKE TRIMMERS. Bonney's, \$ doz, \$10, dis 40 & 5 Stearns', \$ doz, \$9, dis 30 10 Ives', No. 1, \$15; No. 2, \$12, dis 55 10 Douglass', \$ doz, \$9, dis 15 SILVER-PLATED WARE. Wm. Rogers Manf. Co., dis 50, 5 & 5 Holmes, Booth & Hayden, dis 40 10 & 5 Brown Bros., dis 40 10 & 5 Wallace's Steel Silver Plated, dis 35 10 Rogers Bros 1867, dis 50 C. Rogers & Bro., dis 40, 10 & 5 SILVER PLATED HOLLOW WARE. Wm. Rogers Manf. Co., dis 40, 15 & 5 Meriden Britannia Co., dis 35 SPOONS. Britannia, dis 60 10 Tinned, Iron, Table and Tea, dis 65 Tinned Iron Basting, dis 65 German Silver, dis 40 STONE. Hindustan No. 1, 5c; Aze, 8c, net Sand Stone, \$ lb. 10c, dis 25 & 10 Washita Stone, No. 1, \$ lb. 16c, net Washita Stone, ships, No. 1, \$ lb. 45c, net Arkansas, \$1.50 \$ lb. net SQUARES. Steel, dis 50 \$; full cases, dis 50 10 \$ Iron, dis 50 \$; full cases, dis 50 10 \$ Nickel Plated, add \$2.50 \$ doz, net Try Square and T Bevel, dis 40 10 Dieton's Try Square and T Bevels, dis 40 \$ VISES. Solid Box—Wilson's, dis 50 Trenton, dis 45 Iron City Tool Works, dis 50 Bench—Wilson's, dis 45 Trenton, dis 25 Parker's, dis 30 Preniss, dis 25 Bonney's, dis 25 Well Wheels, dis 60 10 & 10	Brass and Copper, list of Jan. 17, 1884 Bright and Annealed, Nos. 10 15, dis 50 10 10 Bright and Annealed, Nos. 10 15, dis 50 10 10 Bright and Annealed, Nos. 10 15, dis 50 10 10 Coppered, Nos. 10 15, dis 50 10 10 Galvanized, Nos. 10 15, dis 50 10 10 Tinned, Nos. 10 15, dis 50 10 10 Annealed Fence, Nos. 18 to 25, dis 50 10 10 Annealed Fence, Nos. 18 to 25, dis 50 10 10 Fence Staples, Galvanized, dis 50 10 10 Japanese Barb Fence, dis 50 10 10 Galvanized Barbed Fence, dis 50 10 10 Buck Thorn Galvanized, dis 50 10 10 Picture Wire, dis 50 10 10 Clothes Line Wire, Galvanized, dis 50 10 10 Wire Cloth, green, drab and black, \$ sq ft 2 c net WINCHES. American Adjustable, dis 45 Baxter's Adjustable "S," list Jan. 1880, dis 30 & 5 Baxter's Diagonal, dis 30 & 5 Coe's Genuine, dis 50 10 Coe's "Mechanics," dis 50 10 & 10 Coe's Pattern, Malleable, dis 75 Coe's Pattern, Wrought, dis 60 10 Girard Standard, dis 50 10 Girard Aze, dis 60 10 Always Ready, \$9.00, dis 25 WINNERS. Universal, XX, No. 2 1/2, dis 42 Universal, XX, No. 3, dis 42 Universal, XX, No. 1 1/2, dis 51.00 Universal, XX, No. 1, dis 66.00 Universal, XX, No. 8, dis 10 75 Universal, XX, No. 12, dis 20 25 Universal, XX, No. 18, dis 22 75 Universal, XX, No. 22, dis 30 25 Peerless, no Cogs, No. 1, dis 40 Peerless, with Cogs, No. 2, dis 45.00 Peerless, with Cogs, No. 3, dis 45.00 THERMOMETERS. Tin Case, dis 7 & 10 Storm Glasses, \$3.25 \$ doz. TACKS, BRAD- &C. New List, Sept. 1, 1882. Tinned Swedge Tacks, dis 30 Tinned American Tacks, dis 30 Swedge Tacks, all kinds, dis 30 American Cut Tacks, dis 30 Copper Tacks and Nails, dis 30 Hungarian Nails, dis 35 Gimp and Lace Tacks, dis 30 Gimp and Lace Tacks, Tinned, dis 30 Finishing Nails, dis 25 Trunk and Clout Nails, dis 35 Common and Patent Brads, dis 35 Basket Nails, dis 20 Brush Tacks, dis 20 Leathered Carpet Tacks, dis 20 Clair Box Nails, dis 20 Chair Nails, dis 20 Double-pointed Tacks, dis 40 & 5 TAP BORERS. Common and Ring, dis 20 Ives' Tap Borer, dis 15 10 Enterprise Mfg. Co., dis 25 TOBACCO CUTTERS. Enterprise Mfg. Co. (Champion), dis 25 Wood Bottom, \$ doz, \$12.00, dis 40 & 5 All Iron, \$ doz, \$9.50, dis 40 & 5 Wilson's, dis 35 TOE CALKS. Winsted, \$ lb 9c, dis 5 TRAPS. Game, Newhouse, dis 35 Game, Oneida Pattern, dis 60 10 Game, Blake's Patent, dis 60 10 Mouse, Wood, Choker, \$ doz holes, 16c Mouse, Round Wire, \$ doz \$1.50, dis 10 Mouse, Cage, Wire, \$ doz \$2.50, dis 10 Mouse, Catch-em-alive, \$ doz \$2.50, dis 10 Cyclon Mouse, \$ doz 75 cts. Ideal Mouse, \$ doz \$1.00	Rat, "Decoy" dis 10 10 Delusion Mouse, per doz. \$10.00, dis 10 10 TROWELS Lothrop's Brick and Plastering, dis 25 Reed's Brick and Plastering, dis 15 Dieton's Brick and Plastering, dis 15 Clement & Maynard, dis 20 Worrall's Brick, dis 20 Brades & Waiby, dis 20 Garden, dis 25 TRUCKS (WAREHOUSE, &C.) Handy Truck, dis 50 net Penfield Block Co.'s list, 1882, dis 35 Peerless, with Cogs, No. 3, dis 50 Peerless, with Cogs, No. 4, dis 60 Bureka, No. 2, dis 42 net MISCELLANEOUS "Diamond" Vegetable Grater, \$5.00, dis 10 Rotary Knife Potato Parer, \$18.00, dis 10 Metallic Shingles, \$5.50 and \$6.50 per square Hopper Cherry Seeders, \$5.00, dis 10
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Manufacturer of the

## SELDEN PATENT PACKING



FOR  
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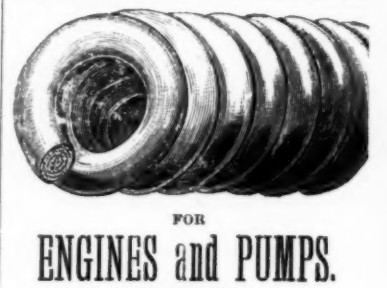
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Burns **WITHOUT** a Chimney.

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Give a larger and brighter flame than can be obtained with a chimney. The combustion is perfect, and they are therefore free from the slightest odor. The globes having large openings at both top and bottom are never broken by the heat. Are superior to all mechanical lamps, in that they require no winding up and have no complicated machinery to get out of order. They are made with both *Single* and *Duplex* Burners.

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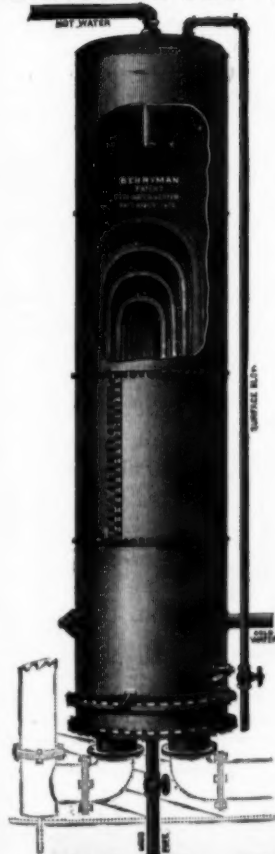
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The Shells of the Berryman are of C H No. 1 iron, and tested to 175 pounds cold water. Every heater is guaranteed to be absolutely tight, making it the only Feed Water Heater applicable to a Condensing Engine, increasing the vacuum and imparting a high degree of heat in the feed water, saving eight to ten per cent.

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has been in constant use for more than 12 years in all parts of the United States and Europe, and none have ever needed repairs. It gives the highest result attainable by the use of exhaust steam.

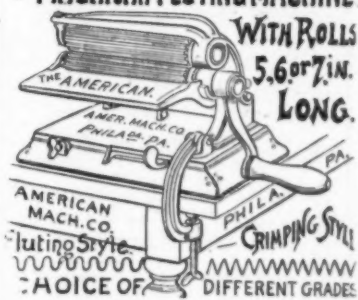
Boiler repairs, and the vexation by shutting down when in a hurry, are saved. The trouble and expense of throwing out a poor heater and putting in a good one are saved by the use of **The Berryman Feed Water Heater and Purifier.**

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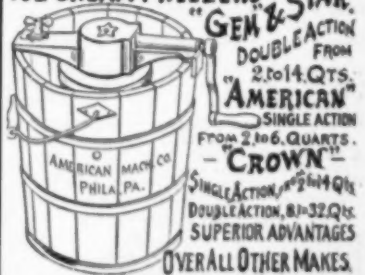
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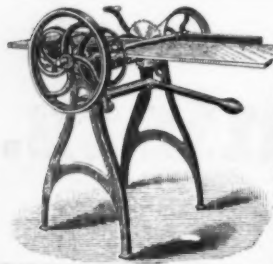
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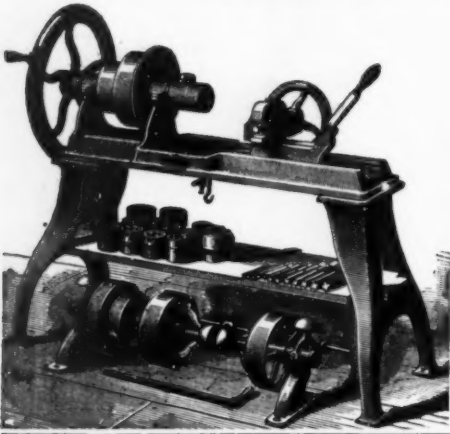
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Patent Food and Steam Power Machinery. Complete outfits for Business in the Workshop. Lathes for Wood or Metal. Circular Saws, Scroll Saws, Formers, Mortisers, Tenoners, etc., etc. Machines on trial, if desired.

NORRIS COOK, Hendersonville, N. Y., says: "The Machine I ordered from you is at hand. It is all right, and works like a charm. We have tried it in every way in which it can be used and find that it does all that you recommend it to do. It will be worth its cost to me in one year. Our foreman says it is worth \$500 to us. I have ordered the agent to forward the balance due you. I shall want your Tenoner for the next machine I buy."

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ROLL AND SHEET BRASS.

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COMMON HIGH BRASS.

Wider than 1/2 10 12 14 16 18  
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To No. 20, inclusive... .31 .32 .33 .35 .37 .39  
Nos. 21, 22, 23 and 24... .22 .33 .34 .36 .38 .30  
Nos. 25 and 26... .24 1/2 .23 1/2 .34 1/2 .27 .29 .31  
Nos. 27 and 28... .33 .34 .35 .38 .30 .32  
Add 9 cts. 1/2 lb. for sheets cut to particular widths and lengths.

Add 1/2 c. 1/2 lb. additional on each number thinner than Nos. 23 to 28, inclusive.

Brass thinner than No. 28 is Platers' Brass.

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Brazing, Spinning and Spring Brass, one cent more than common High Brass.

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Add to list as follows:

Over 1/2 in. to 2 in., inclusive, Nos. 12 to 20, inclusive... 1/2 c.

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Over 1/2 in. to 3 in., inclusive, Nos. 21 to 28, inclusive... 1

Over 1/2 in. to 1/2 in., inclusive, Nos. 21 to 28, inclusive... 2

1/2 in. and narrower, Nos. 21 to 28, inclusive, not less than... 6

Over 1/2 in. to 2 in., inclusive, Nos. 29 to 32, inclusive... 1 1/2

Over 1/2 in. to 1/2 in., inclusive, Nos. 29 to 32, inclusive... 3

3/4 in. and narrower, Nos. 29 to 32, inclusive, not less than... 13

Over 1/2 in. to 2 in., inclusive, No. 33 and thinner... 3

Over 1/2 in. to 1/2 in., inclusive, No. 33 and thinner... 6

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Silt Metal cut to particular lengths, 1/2 lb. additional... 5

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In bars... .40c.

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In ingots, planed or polished... .46c.

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Brown & Sharpe's Gauge the Standard for all Tubing. Per lb.

Plain, to No. 20, inclusive... .35

Above 5-16 inch to 3 inches, inclusive... .45

Plain, to No. 20, above 3 inches... .45

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1/2 inch... .60

3-16 inch... .1 00

1/2 inch... .1 50

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OVER 6,000 IN USE.

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1 Engine Lathe, 10 in. x 3 1/2 ft.  
1 each Engine Lathes, 11 in. x 4 and 5 ft.  
1 " " " " 13 in. x 5, 6 and 8 ft.  
1 Engine Lathe, 14 in. x 5, 6 and 8 ft.  
1 " " " " 16 in. x 6 ft.  
1 each Engine Lathes, 16 in. x 6, 7, 8 and 10 ft.  
1 Engine Lathe, 18 in. x 6, 8, 10 and 12 ft.  
1 " " " " 20 in. x 8, 10, 12, 14 and 16 ft.  
1 " " " " 22 in. x 8, 10, 12, 14 and 16 ft.  
1 " " " " 24 in. any length of bed to 36 ft.  
1 " " " " 26 in. " " " " 36 ft.  
1 " " " " 28 in. " " " " 46 ft.  
1 " " " " 30 in. " " " " 28 ft.  
1 " " " " 32 in. " " " " 28 ft.  
1 " " " " 36 in. " " " " 28 ft.  
1 " " " " 42 in. " " " " 28 ft.  
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1 " " " " 15 in. x 4, 6 and 8 ft. Rod feed only.

1 each Turret Lathes, 13 and 14 in. x 14 in. x 6 ft.

1 Fox Turret Lathe, 16 in. x 6 ft.

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1 Iron Planer, 18 in. x 15 in. x 3 ft.

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1 Iron Planer, 30 in. x 30 in. x 10 ft.

1 " " " " 36 in. x 36 in. x 10 ft.

1 each 16, 20, 22, 23, 25, 28, 30, 34 and 38 in. Upright Drills.

1 each, Nos. 2, 3, 4 and 6 Spindle Gang Drills.

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1 No. 2 Milling Machine. Lincoln Pattern.

1 New Pattern Milling Machine. Grant & Bogert.

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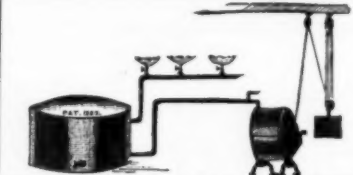
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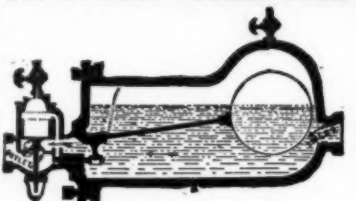
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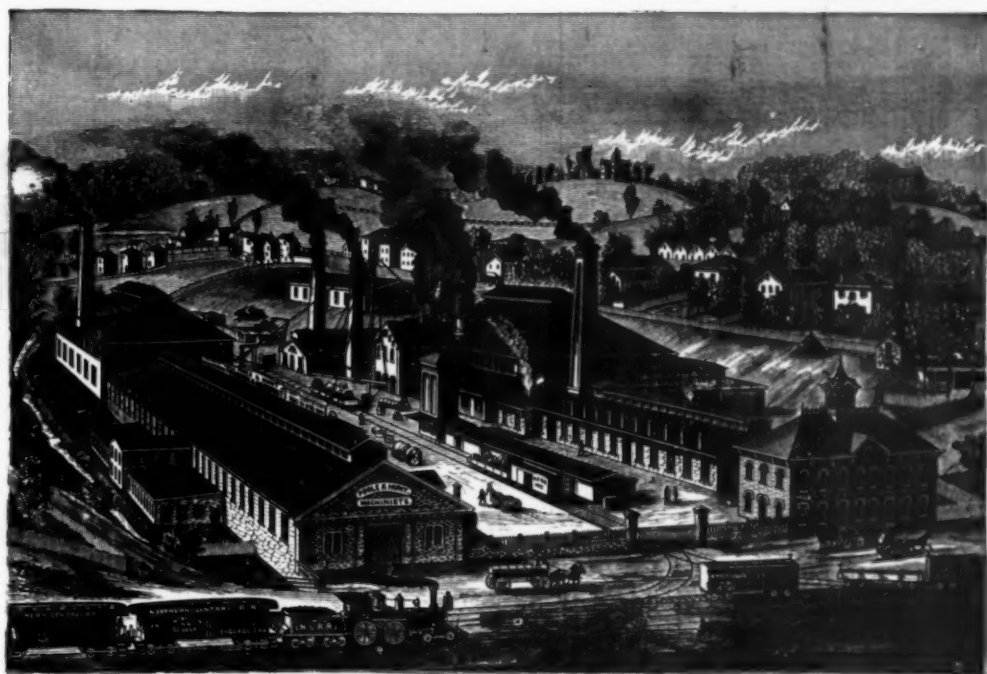
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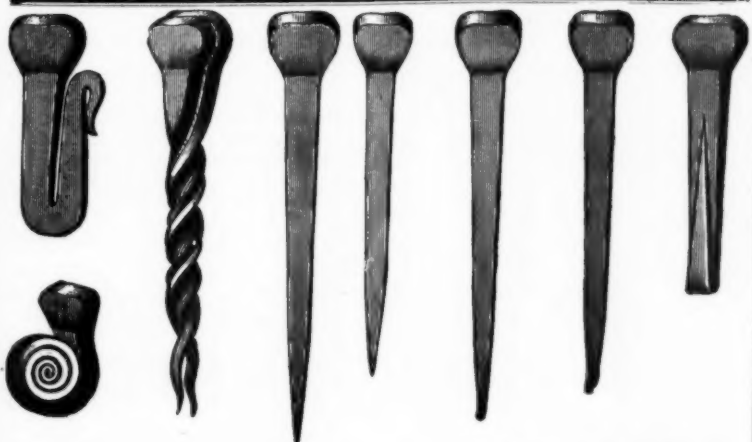
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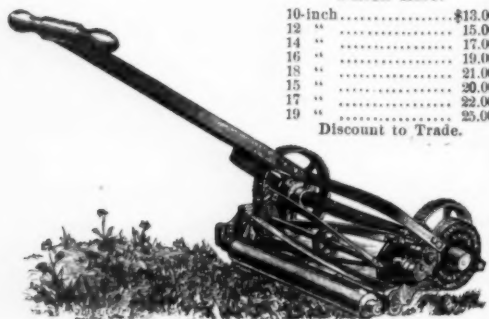
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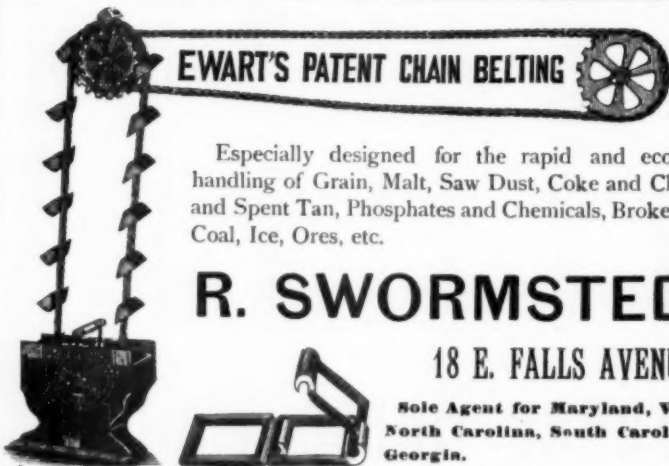
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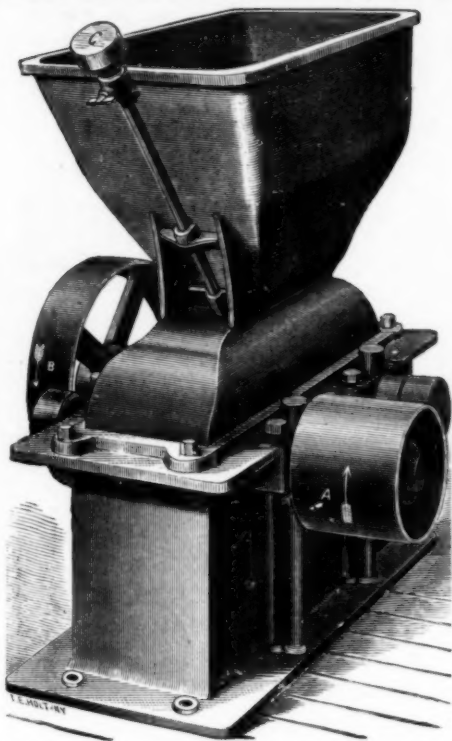
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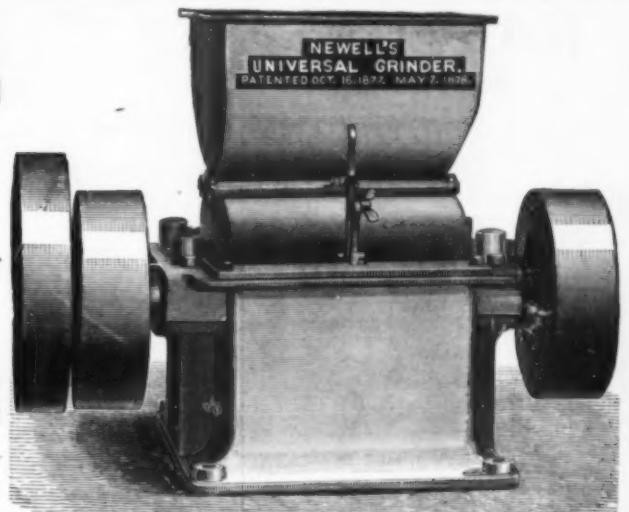
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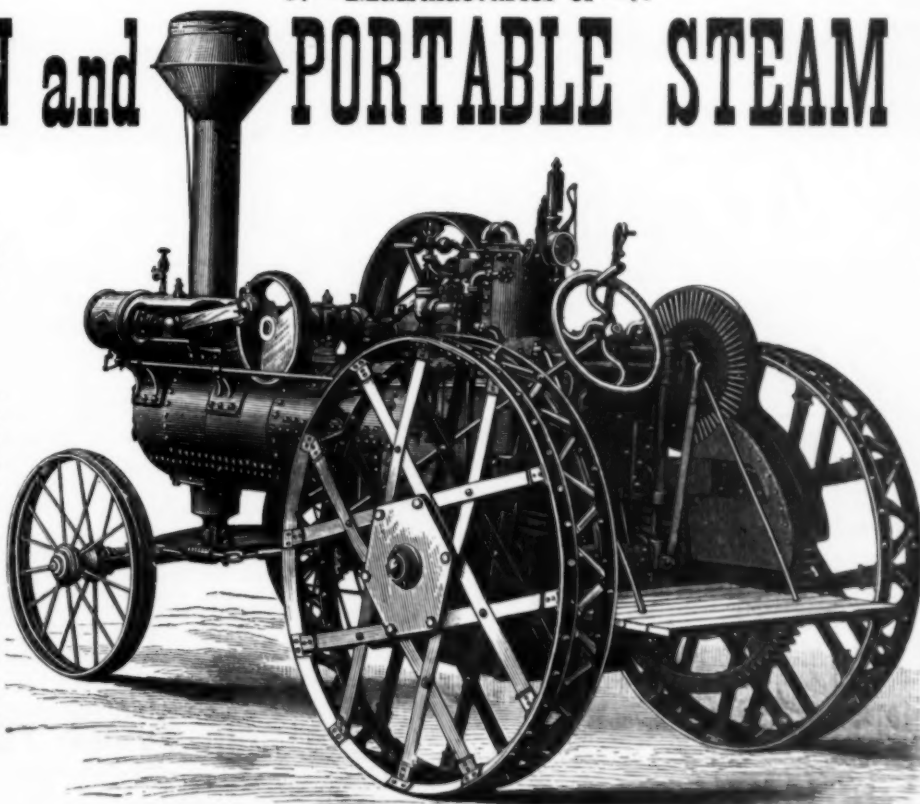
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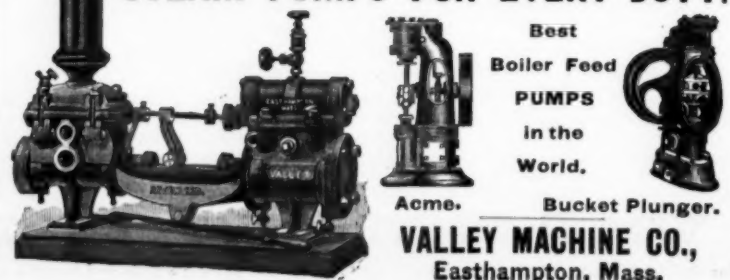
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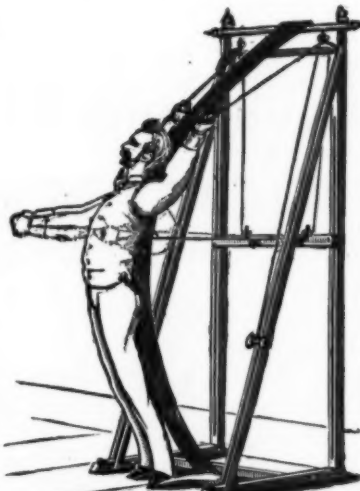


Fig. 9, CURVED BOARD—To strengthen the Back, Neck, Abdominal Muscles and Expand the Chest.

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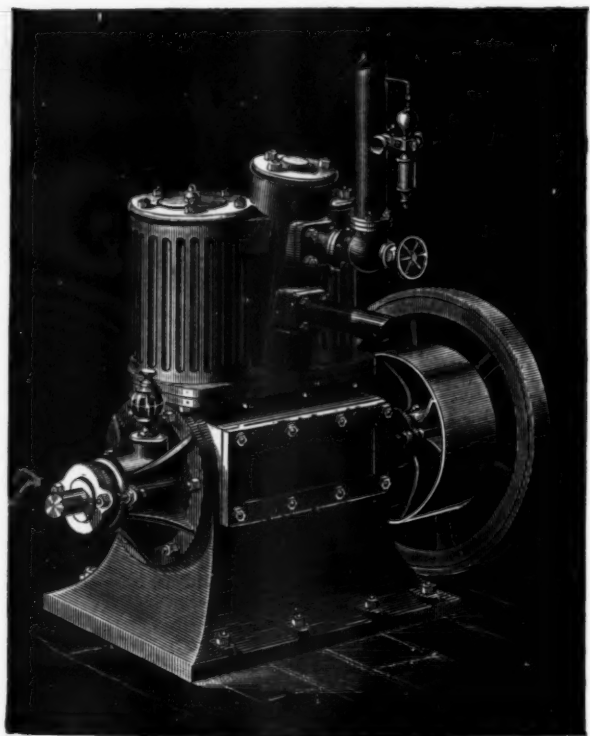
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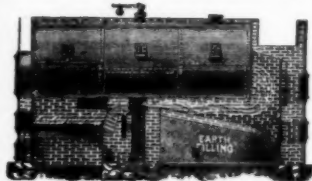
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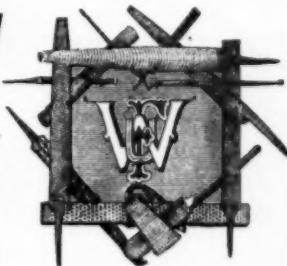
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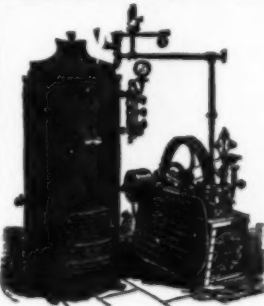
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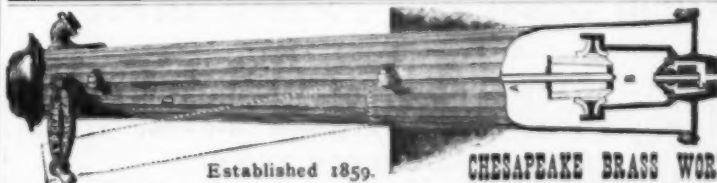
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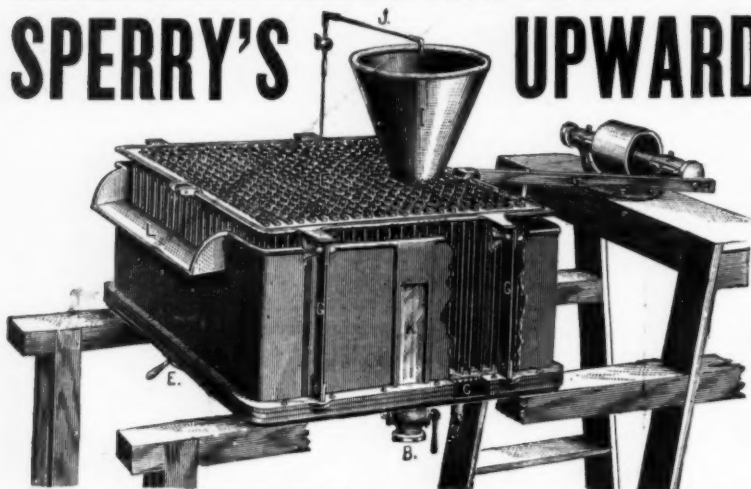
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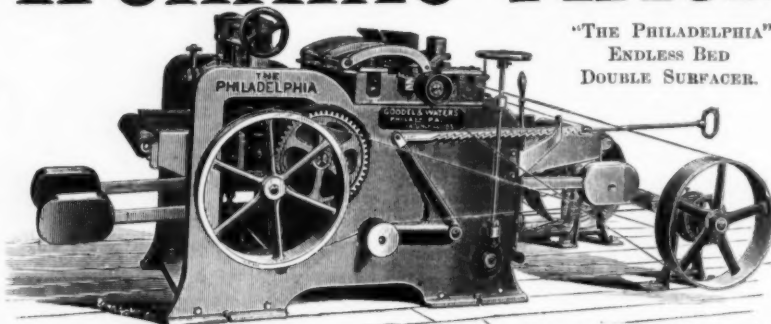
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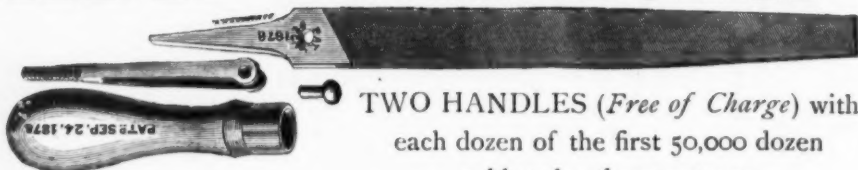
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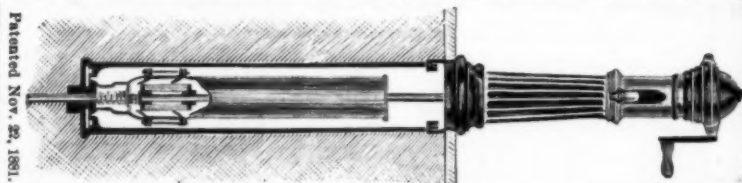
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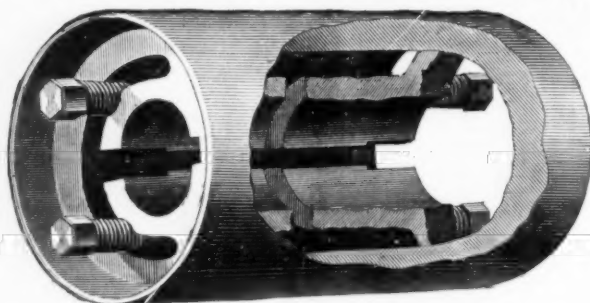
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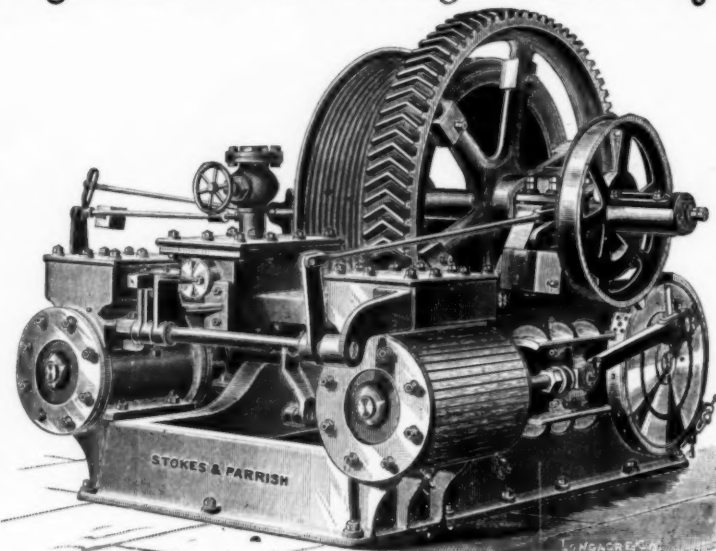
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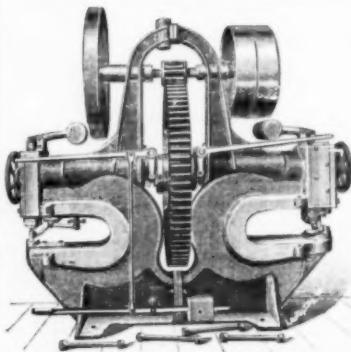
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